SYSTEM FOR EVALUATING ENTERPRISE AND PROGRAM FOR EVALUATING

ENTERPRISE

5

TECHNICAL FIELD

[0001]

The present invention relates to an enterprise evaluation

device and enterprise evaluation program for evaluating the

10   value of an enterprise based on patent documents.

BACKGROUND ART

[0002]

Japanese Patent Laid-Open Publication No. 2000-348015

15   describes a system, method and recording medium for evaluating

an evaluation item based on first data having a predetermined

renewal interval and second data having a renewal interval

that is shorter than the first data. This evaluation system

has (a) means for creating a first evaluation model according

20   to input of the first data of sample targets, (b) means for

applying the first data of the sample targets to the first

evaluation model and calculating first evaluation output, (c)

means for creating a second evaluation model according to

input of the second data and the first evaluation output of

25   the sample targets, (d) means for applying the first data to

the first evaluation model according to the input of the first

data of an evaluation target and calculating second evaluation output, and (e) means for applying the second data and the second evaluation output of the evaluation target to the second evaluation model and calculating the evaluation output of the evaluation target, and thereby evaluates the evaluation item of the evaluation target that could change with time.

[0003]

In Japanese Patent Laid-Open Publication No. 2000-348015, to predict changes in the enterprise evaluation derived from data in which the renewal period is relatively long such as every year or every quarter, data in which the renewal period is relatively short such as stock price, interest and currency exchange that fluctuate from day to day is used to reflect changes in the economy. In this system, enterprise evaluation is made in a timely manner at the point in time such evaluation is to be made.

[0004]

Further, Japanese Patent Laid-Open Publication No. 2001-76042 describes an intellectual property evaluation device and intellectual property evaluation method for evaluating the proprietary nature of intellectual property relating to a pending or registered invention or the like. This evaluation device has an actual profit input means for inputting data regarding the actual profit, a compound cost rate input means for inputting data regarding the compound cost rate per year, a compound present value calculation means for calculating the

compound present values of annual compensation by multiplying the data regarding the actual profit with the data regarding the compound cost rates per year, an intellectual property price calculation means for calculating an intellectual

5   property price by totaling the compound present value of the calculated annual compensation amounts, and an output means for outputting the calculated intellectual property value amount calculated with the intellectual property price calculation means.

10   [0005]

The above-mentioned Laid-Open Publication No. 2001-76042 describes a technique of comprehending the asset value of currently remaining patents by depreciating registered patents and the related sales volume and profits. Moreover, with

15   respect to the evaluation of the value of each patent, the input ranking of evaluation conducted by one's own company and evaluation conducted by other companies is evaluated as the contribution.

[0006]

20   For financial institutions, investors and corporations, it is extremely important to assess the enterprise value of investment destinations and customers. Thus, conventionally, in order to assess such enterprise value, attempts have been made for objectively judging the enterprise value based on

25   management-finance information regarding management, finance or stock prices. Among such attempts, there are methods of

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screening and ranking the company to be evaluated via multivariate analysis, statistical techniques and data mining methods.

5   DISCLOSURE OF THE INVENTION

[0007]

Recently, with the increasing ratio of intangible assets making up the enterprise value, the value of intangible assets now has a great influence on the enterprise value.

10 Nevertheless, generally speaking, an enterprise value is not a book value in a balance sheet represented by total assets = liabilities + stockholders' equity, and is roughly calculated by the total market value + liabilities. Therefore, when complete current value accounting is applied, the amount

15 calculated by the total market value – stockholders' equity will represent the validity of invisible assets (intangible assets) of the enterprise. Nevertheless, there is a drawback in that it is difficult to specifically calculate the value of intangible assets and judge the value according to application.

20   [0008]

Further, with the system described in Japanese Patent Laid-Open Publication No. 2000-348015, a model for enterprise evaluation is created by inputting data (dynamic data) with a short renewal period such as stock prices in addition to data

25 (static data) with a long renewal period such as financial data to be publicly announced at the end of the fiscal term.

The static data and dynamic data related to the evaluation target are applied to this model. Thereby, this publication is indicating that the evaluation of the item to be evaluated, which could change over time, is calculated in a timely manner

5 and as the latest information. Nevertheless, there is a drawback in that it is not possible to easily judge whether an invention in a predetermined technical field is in a monopolistic state by a specific enterprise, or in a competitive state, and to judge to what degree the competitive

10 position relating to inventions is absolute or relative.

[0009]

Moreover, the intellectual property evaluation device described in Japanese Patent Laid-Open Publication No. 2001-76042 is to evaluate the intellectual property such as patents

15 one by one each year, and there is a drawback in that it is not possible to judge the enterprise value.

[0010]

The total market value is determined by the stock prices in the market. Thus, whether the current stock price and the

20 value of intangible assets calculated based on the stockholders' equity in the book are valid is an extremely important element for investors in the decision-making of stock trading. Enterprises are hoping to increase their value of intangible assets and thereby increase their enterprise

25 value by procuring funds and continuing technical developments. Therefore, increasing the value of intangible assets will be

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positioned as an important issue in the management strategy for enterprises.

[0011]

There have been attempts of trying to evaluate intangible assets from the past. Nevertheless, there is a drawback in that it is not possible to evaluate the enterprise value validity by quantitatively and qualitatively incorporating the value of intangible assets. Further, when making an investment in a specified enterprise or jointly developing a product with a specified enterprise, or desiring to be employed in a specified enterprise, there is a drawback in that it is difficult to know the trend of such enterprise in each technical field or to predict the potential of such enterprise.

[0012]

Thus, in light of the conventional circumstances described above, an object of the present invention is to provide an enterprise evaluation device and an enterprise evaluation program capable of acquiring the unexamined publications or publications of registrations based on patent applications of a specified enterprise, analyzing the research and development strategy and intellectual property strategy of such enterprise, and combining this with management-finance information for evaluating the enterprise value.

[0013]

In order to achieve the foregoing object, the present invention provides an enterprise evaluation device,

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comprising:

official gazette acquisition means for acquiring, from a database, publications of patent registrations subjected to registration from among the patent applications filed by a

5   specified enterprise within a specified period;

average period required for registration calculation means for calculating a required registration period for individual applications by subtracting the filing date from the registration date indicated in the acquired publications

10   of registrations, calculating an accumulated required registration period by counting the calculated required registration period for all patents subjected to the registration, and calculating an average period required for registration through dividing the accumulated required

15   registration period by the total number of patents subjected to the registration; and

output means for outputting the calculated average period required for registration to display means, printing means, recording medium, or another telecommunications device via a

20   communication line.

[0014]

Further, in order to achieve the foregoing object, in the enterprise evaluation device of the present invention,

the average period required for registration calculation

25   means calculate the average period required for registration through dividing the accumulated required registration period

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by the total number of patents subjected to the registration and the average number of days of one year or one month.

[0015]

Further, in order to achieve the foregoing object, the present invention provides an enterprise evaluation device, comprising:

official gazette acquisition means for acquiring, from a database, publications of patent registrations subjected to registration from among patent applications in a predetermined technical field filed by a specified enterprise within a specified period;

average period required for registration calculation means for calculating a required registration period for individual applications by subtracting a filing date from a registration date indicated in the acquired publications of registrations, calculating an accumulated required registration period by counting the calculated required registration period for all patents subjected to the registration, and calculating the average period required for registration through dividing the accumulated required registration period by the total number of patents subjected to the registration; and

output means for outputting the calculated average period required for registration to display means, printing means, recording medium, or another telecommunications device via a communication line.

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[0016]

Further, in order to achieve the foregoing object, in the enterprise evaluation device of the present invention,

the average period required for registration calculation means calculate the average period required for registration through dividing the accumulated required registration period by the total number of patents subjected to the registration and the average number of days of one year or one month.

[0017]

Further, in order to achieve the foregoing object, the present invention uses, as the publications of registrations for calculation of the average period required for registration, publications of patent registrations, publications of examined patent applications, publications of examined utility model applications or publications of utility model registrations.

[0018]

Further, in order to achieve the foregoing object, the present invention provides an enterprise evaluation device, comprising:

official gazette acquisition means for acquiring, from a database, unexamined publications requested for examination and publications of patent registrations subjected to registration from among patent applications filed by a specified enterprise within a specified period;

average period before examination request calculation

means for calculating a period before examination request for individual applications by subtracting a filing date from a date of examination request described in the acquired unexamined publications or publications of registrations,

5   calculating an accumulated period before examination request by counting the calculated period before examination request for all patents requested for examination, and calculating the average period before examination request through dividing the accumulated period before examination request by the total

10   number of patents requested for examination; and

output means for outputting the calculated average period before examination request to display means, printing means, recording medium, or another telecommunications device via a communication line.

15   [0019]

Further, in order to achieve the foregoing object, in the enterprise evaluation device of the present invention,

the average period before examination request calculation means calculate the average period before examination request

20   through dividing the accumulated period before examination request by the total number of patents requested for examination and the average number of days of one year or one month.

[0020]

25   Further, in order to achieve the foregoing object, the present invention provides an enterprise evaluation device,

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comprising:

official gazette acquisition means for acquiring, from a database, unexamined publications requested for examination and publications of patent registrations subjected to

5   registration from among patent applications in a predetermined technical field filed by a specified enterprise within a specified period;

average period before examination request calculation means for calculating a period before examination request for

10 individual applications by subtracting a filing date from a date of examination request described in the acquired unexamined publications or publications of registrations, calculating an accumulated period before examination request by counting the calculated period before examination request

15 for all patents requested for examination, and calculating the average period before examination request through dividing the accumulated period before examination request by the total number of patents requested for examination; and

output means for outputting the calculated average period

20 before examination request to display means, printing means, recording medium, or another telecommunications device via a communication line.

[0021]

Further, in order to achieve the foregoing object, in the

25 enterprise evaluation device of the present invention,

the average period before examination request calculation

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means calculate the average period before examination request through dividing the accumulated period before examination request by the total number of patents requested for examination and the average number of days of one year or one

5   month.

[0022]

Further, in order to achieve the foregoing object, the present invention uses, as the publications of registrations, publications of patent registrations, publications of examined

10   patent applications, publications of examined utility model applications or publications of utility model registrations, and uses, as the unexamined publications, publications of unexamined patent applications, published Japanese translations of PCT international applications for patents,

15   publications of unexamined utility model applications or published Japanese translations of PCT international applications for utility models for calculation of the average period before examination request.

[0023]

20   Further, in order to achieve the foregoing object, the present invention provides an enterprise evaluation device, comprising:

official gazette acquisition means for acquiring, from a database, unexamined publications or publications of

25   registrations based on patent applications or utility model applications filed by a specified enterprise within a first

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specified period;

number-of-inventions acquisition means for acquiring number of inventions including the number of patent applications or utility model applications or the number of

5 claims from the acquired unexamined publications or publications of registrations;

management-finance information acquisition means for acquiring R&D cost in the specified enterprise within a second specified period from a management-finance database storing

10 management-finance information of enterprises;

patent application productivity calculation means for calculating the number of inventions per unit of R&D cost as the patent application productivity through dividing the acquired number of inventions by the R&D cost; and

15 output means for outputting the calculated patent application productivity to display means, printing means, recording medium, or another telecommunications device via a communication line.

[0024]

20 Further, in order to achieve the foregoing object, in the enterprise evaluation device of the present invention,

number-of-inventions-per-applicant acquisition means acquire the number of patent applications or utility model applications or the number of claims from each of the acquired

25 unexamined publications or publications of registrations, acquire the number of applicants indicated in each of the

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acquired publications, and acquire the number of inventions
per unit of applicants through dividing the number of patent
applications or utility model applications or the number of
claims by the number of applicants; and

5   the number-of-inventions acquisition means acquire the
total number of inventions by counting the acquired number of
inventions per unit of applicants for all of the acquired
publications.

[0025]

10   Further, in order to achieve the foregoing object, the
enterprise evaluation device of the present invention
calculates the patent application productivity in a
predetermined technical field and in a specified enterprise.

[0026]

15   Further, in order to achieve the foregoing object, the
present invention provides an enterprise evaluation device,
comprising:

official gazette acquisition means for acquiring, from a
database, unexamined publications or publications of
20   registrations based on patent applications or utility model
applications filed by a specified enterprise within a first
specified period;

number-of-inventions acquisition means for acquiring
number of inventions including the number of patent
25   applications or utility model applications or the number of
claims from the acquired unexamined publications or

publications of registrations;

management-finance information acquisition means for acquiring R&D cost in the specified enterprise within a second specified period from a management-finance database storing
5 management-finance information of enterprises;

patent application productivity calculation means for calculating the number of inventions per unit of R&D cost as the patent application productivity through dividing the acquired number of inventions by the R&D cost;
10   publication in which an examination request period has passed acquisition means for acquiring, from a database, unexamined publications or publications of registrations based on patent applications or utility model applications filed by the specified enterprise within a third specified period so
15 that the examination request period pass before tabulation;

estimated examination request ratio acquisition means for acquiring the number of patent applications and the number of examination requests made in the applications from the unexamined publications or publications of registrations based
20 on patent applications or utility model applications filed within the third specified period, and calculating the estimated examination request ratio through dividing the acquired number of examination requests by the acquired number of patent applications;
25   examination request productivity calculation means for calculating the examination request productivity by

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multiplying the calculated patent application productivity with the estimated examination request ratio; and

output means for outputting the calculated examination request productivity to display means, printing means, recording medium, or another telecommunications device via a communication line.

[0027]

Further, in order to achieve the foregoing object, the present invention provides an enterprise evaluation device, comprising:

first official gazette acquisition means for acquiring, from a database, unexamined publications or publications of registrations based on patent applications filed by a specified enterprise within a first specified period;

number-of-inventions acquisition means for acquiring number of inventions including the number of patent applications or the number of claims from the acquired unexamined publications or publications of registrations;

management-finance information acquisition means for acquiring R&D cost in the specified enterprise within a second specified period from a management-finance database storing management-finance information of enterprises;

patent application productivity calculation means for calculating the number of inventions per unit of R&D cost as the patent application productivity through dividing the acquired number of inventions by the R&D cost;

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fourth official gazette acquisition means for acquiring, from a database, publications of patent registrations subjected to registration from among the patent applications filed by the specified enterprise within a fourth specified

5   period;

average period required for registration calculation means for calculating a required registration period for individual applications by subtracting a filing date from a registration date indicated in the acquired publications of

10 registrations, calculating an accumulated required registration period by counting the calculated required registration period for all patents subjected to the registration, and calculating the average period required for registration through dividing the accumulated required

15 registration period by the total number of patents subjected to the registration;

fifth official gazette acquisition means for acquiring, from a database, unexamined publications or publications of registrations based on patent applications filed by the

20 specified enterprise within a fifth specified period, and the publications of patent registrations subjected to registration by the arrival of a predetermined time from among the patent applications;

cumulative number of patent applications acquisition

25 means for acquiring, for each predetermined period, the cumulative number of patent applications filed by the

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specified enterprise within the specified period based on the
acquired unexamined publications or publications of
registrations;

cumulative number of patent registrations acquisition

5   means for acquiring, for each predetermined time, the
cumulative number of patent registrations of patents subjected
to registration by the arrival of each predetermined time
based on the acquired publication of registrations;

cumulative patent registration ratio calculation means

10   for calculating, for each predetermined time, the cumulative
patent registration ratio through dividing the acquired
cumulative number of patent registrations by the cumulative
number of patent applications;

estimated registration ratio calculation means for

15   calculating, for each predetermined time, the natural
logarithm of the cumulative patent registration ratio and
calculating the regression line or regression curve thereof,
and calculating a future estimated registration ratio by
substituting the calculated average period required for

20   registration for the calculated regression line or regression
curve;

patent acquisition productivity calculation means for
calculating the patent acquisition productivity by multiplying
the calculated patent application productivity with the

25   estimated registration ratio; and

output means for outputting the calculated patent

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acquisition productivity to display means, printing means, recording medium, or another telecommunications device via a communication line.

[0028]

5   Further, in order to achieve the foregoing object, the present invention uses, as the predetermined technical field, a technical field classified by IPC sub-classes, keywords or inventors.

[0029]

10   Further, in order to achieve the foregoing object, the present invention comprises:

display data generation means for generating display data for associating and displaying the patent application productivity and the examination request productivity in a

15   graph or the like; and

output means for outputting the display data to display means, printing means, recording medium, or another telecommunications device via a communication line.

[0030]

20   Further, in order to achieve the foregoing object, the present invention comprises:

display data generation means for generating display data for associating and displaying the patent application productivity and the patent acquisition productivity in a

25   graph or the like; and

output means for outputting the display data to display

means, printing means, recording medium, or another telecommunications device via a communication line.

[0031]

Further, in order to achieve the foregoing object, the present invention comprises:

display data generation means for generating display data for associating and displaying the examination request productivity and the patent acquisition productivity in a graph or the like; and

output means for outputting the display data to display means, printing means, recording medium, or another telecommunications device via a communication line.

[0032]

According to the present invention,

official gazette acquisition means acquire, from a database, publications of patent registrations subjected to registration from among the patent applications filed by a specified enterprise within a specified period;

average period required for registration calculation means calculate a required registration period for individual applications by subtracting the filing date from the registration date indicated in the acquired publications of registrations, calculate an accumulated required registration period by counting the calculated required registration period for all patents subjected to the registration, and calculate an average period required for registration through dividing

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the accumulated required registration period by the total number of patents subjected to the registration and average number of days of one year or one month.

Therefore, the average years required for registration can be calculated and displayed upon classification per technical area such as based on enterprises, based on workplaces, based on inventors, based on IPC and the like, and the user will be able to know which technical field the enterprise to be researched is laying emphasis, or which technical field the enterprise to be researched is defensively positioning the inventions.

Further, a user will be able to judge that a business department having a short average period required for registration is a department that is advancing development with strategic emphasis, and, contrarily, a user will be able to judge that a technical field having a long average period required for registration is a relatively defensive department. Like this, by perusing the average period required for registration, a user will be able to judge the attitude of an enterprise to patents.

Further, according to the present invention, since the average period required for registration calculation means calculates the average period required for registration through dividing the accumulated required registration period by the total number of patents subjected to registration and average number of days of one year or one month, the results

can be displayed to the user in a easy-to-view manner, and the user will be able to instantaneously understand the average period required for registration in units of years or months. For instance, if the average period required for registration

5   per patent application is 365.25 days, this can be notified as 1 year or 12 months.

Moreover, according to the present invention, since the average period required for registration is calculated based on patent applications per predetermined technical field in a

10   specified enterprise, it will be possible to compare the average period required for registration with competitors per technical field, and use this as information for deciding on whether one's company should enter into a new technical field.

[0033]

15   Further, the present invention comprises:

official gazette acquisition means for acquiring, from a database, unexamined publications requested for examination and publications of patent registrations subjected to registration from among patent applications filed by a

20   specified enterprise within a specified period;

average period before examination request calculation means for calculating a period before examination request for individual applications by subtracting a filing date from a date of examination request described in the acquired

25   unexamined publications or publications of registrations, calculating an accumulated period before examination request

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by counting the calculated period before examination request for all patents requested for examination, and calculating the average period before examination request through dividing the accumulated period before examination request by the total

5   number of patents requested for examination; and

output means for outputting the calculated average period before examination request to display means, printing means, recording medium, or another telecommunications device via a communication line.

10   Therefore, it will be possible to judge that patent applications of a certain business department to request for examination at an early stage belong to a strategically important technical field, and it will be possible to judge that technical fields with a long average period before

15   examination request belong to a relatively defensive department. Therefore, based on the calculated average period before examination request, the user will be able to know which technical field the enterprise to be researched is laying emphasis, or which technical field the enterprise to be

20   researched is defensively positioning the inventions, and the user will be able to judge the attitude of an enterprise to patents.

Moreover, according to the present invention, since the average period before examination request calculation means

25   calculates the average period before examination request through dividing the accumulated period before examination

request by the total number of examination requests and the average number of days of one year or one month, the results can be displayed to the user in a easy-to-view manner, and the user will be able to instantaneously understand the average

5   period before examination request in units of years or months.

Moreover, according to the present invention, since the average period before examination request is calculated based on patent applications per predetermined technical field in a specified enterprise, it will be possible to total the average

10   years before examination request according to workplaces of enterprises, inventors, IPC and the like. Also it is possible to compare the average period before examination request with competitors per technical field, and use this as information for deciding on whether one's company should enter into a new

15   technical field, enabling to learn, for example, that a sector for which the average period before examination request is short is a sector strategically important.

Further, the present invention uses, as the publications of registrations, publications of patent registrations,

20   publications of examined patent applications, publications of examined utility model applications or publications of utility model registrations, and uses, as the unexamined publications, publications of unexamined patent applications, published Japanese translations of PCT international applications for

25   patents, publications of unexamined utility model applications or published Japanese translations of PCT international

applications for utility models. Therefore, enterprise

evaluation can be conducted more accurately based on broader

technical documents.

[0034]

5   Moreover, the present invention comprises:

official gazette acquisition means for acquiring, from a

database, unexamined publications or publications of

registrations based on patent applications or utility model

applications filed by a specified enterprise within a first

10   specified period;

number-of-inventions acquisition means for acquiring

number of inventions including the number of patent

applications or utility model applications or the number of

claims from the acquired unexamined publications or

15   publications of registrations;

management-finance information acquisition means for

acquiring R&D cost in the specified enterprise within a second

specified period from a management-finance database storing

management-finance information of enterprises;

20   patent application productivity calculation means for

calculating the number of inventions per unit of R&D cost as

the patent application productivity through dividing the

acquired number of inventions by the R&D cost; and

output means for outputting the calculated patent

25   application productivity to display means, printing means,

recording medium, or another telecommunications device via a

communication line.

Therefore, it will be possible to calculate the number of claims filed per R&D cost, measure the productivity of creating patents as a part of the results of research and

5   development, and estimate the efficiency of the research and development.

The larger the calculated value of the patent application productivity, it will be possible to judge that the productivity of the number of patent applications or number of

10 inventions such as the number of claims in the research and development is high, and that the enterprise's consciousness of patents is high. Further, it will be possible to judge whether the enterprise is making efficient research investment.

Further, with respect to patent applications filed by a

15 specific enterprise within a first specified period, by calculating the patent application productivity using the R&D cost of the previous year (during the second specified period) of such patent applications, it will be possible to calculate the patent application productivity of the number of

20 inventions (number of claims filed or the like) of the following year having a high coefficient of correlation with the variation in the R&D cost, and the productivity of the number of inventions of an enterprise can be judged more accurately.

25   Further, according to the present invention, number-of-inventions-per-applicant acquisition means

acquire the number of patent applications or utility model

applications or the number of claims from each of the acquired

unexamined publications or publications of registrations,

acquire the number of applicants indicated in each of the

5   acquired publications, and acquire the number of inventions

per unit of applicants through dividing the number of patent

applications or utility model applications or the number of

claims by the number of applicants; and

the number-of-inventions acquisition means acquire the

10   total number of inventions by counting the acquired number of

inventions per unit of applicants for all of the acquired

publications.

Therefore, the productivity of the number of inventions

of an enterprise can be judged more accurately even for

15   enterprises filing numerous joint applications.

According to the present invention, since the patent

application productivity is calculated in the predetermined

technical field of a specific enterprise, it will be possible

to judge the productivity of the number of inventions per

20   technical field or per manufacturing department even for

enterprises engaged in numerous fields of technical

development.

[0035]

Further, the present invention comprises:

25   official gazette acquisition means for acquiring, from a

database, unexamined publications or publications of

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registrations based on patent applications or utility model

applications filed by a specified enterprise within a first

specified period;

number-of-inventions acquisition means for acquiring

5   number of inventions including the number of patent

applications or utility model applications or the number of

claims from the acquired unexamined publications or

publications of registrations;

management-finance information acquisition means for

10   acquiring R&D cost in the specified enterprise within a second

specified period from a management-finance database storing

management-finance information of enterprises;

patent application productivity calculation means for

calculating the number of inventions per unit of R&D cost as

15   the patent application productivity through dividing the

acquired number of inventions by the R&D cost;

publication in which an examination request period has

passed acquisition means for acquiring, from a database,

unexamined publications or publications of registrations based

20   on patent applications or utility model applications filed by

the specified enterprise within a third specified period so

that the examination request period pass before tabulation;

estimated examination request ratio acquisition means for

acquiring the number of patent applications and the number of

25   examination requests made in the applications from the

unexamined publications or publications of registrations based

on patent applications or utility model applications filed

within the third specified period, and calculating the

estimated examination request ratio through dividing the

acquired number of examination requests by the acquired number

5   of patent applications;

examination request productivity calculation means for

calculating the examination request productivity by

multiplying the calculated patent application productivity

with the estimated examination request ratio; and

10   output means for outputting the calculated examination

request productivity to display means, printing means,

recording medium, or another telecommunications device via a

communication line.

Therefore, it will be possible to correct the patent

15   application productivity based on the performance of previous

examination requests, and the productivity of patent

applications can be corrected into an easy-to-use format. By

perusing the examination request productivity, the user will

be able to predict the productivity or establishment of rights

20   of future patent applications, and it will be possible to

judge whether the enterprise has numerous effective

applications, numerous defensive applications, or numerous

wasteful applications.

[0036]

25   Moreover, the present invention comprises:

first official gazette acquisition means for acquiring,

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from a database, unexamined publications or publications of
registrations based on patent applications filed by a
specified enterprise within a first specified period;

number-of-inventions acquisition means for acquiring
5 number of inventions including the number of patent
applications or the number of claims from the acquired
unexamined publications or publications of registrations;

management-finance information acquisition means for
acquiring R&D cost in the specified enterprise within a second
10 specified period from a management-finance database storing
management-finance information of enterprises;

patent application productivity calculation means for
calculating the number of inventions per unit of R&D cost as
the patent application productivity through dividing the
15 acquired number of inventions by the R&D cost;

fourth official gazette acquisition means for acquiring,
from a database, publications of patent registrations
subjected to registration from among the patent applications
filed by the specified enterprise within a fourth specified
20 period;

average period required for registration calculation
means for calculating a required registration period for
individual applications by subtracting a filing date from a
registration date indicated in the acquired publications of
25 registrations, calculating an accumulated required
registration period by counting the calculated required

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registration period for all patents subjected to the

registration, and calculating the average period required for

registration through dividing the accumulated required

registration period by the total number of patents subjected

5   to the registration;

fifth official gazette acquisition means for acquiring,

from a database, unexamined publications or publications of

registrations based on patent applications filed by the

specified enterprise within a fifth specified period, and the

10   publications of patent registrations subjected to registration

by the arrival of a predetermined time from among the patent

applications;

cumulative number of patent applications acquisition

means for acquiring, for each predetermined period, the

15   cumulative number of patent applications filed by the

specified enterprise within the specified period based on the

acquired unexamined publications or publications of

registrations;

cumulative number of patent registrations acquisition

20   means for acquiring, for each predetermined time, the

cumulative number of patent registrations of patents subjected

to registration by the arrival of each predetermined time

based on the acquired publication of registrations;

cumulative patent registration ratio calculation means

25   for calculating, for each predetermined time, the cumulative

patent registration ratio through dividing the acquired

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cumulative number of patent registrations by the cumulative number of patent applications;

estimated registration ratio calculation means for calculating, for each predetermined time, the natural logarithm of the cumulative patent registration ratio and calculating the regression line or regression curve thereof, and calculating a future estimated registration ratio by substituting the calculated average period required for registration for the calculated regression line or regression curve;

patent acquisition productivity calculation means for calculating the patent acquisition productivity by multiplying the calculated patent application productivity with the estimated registration ratio; and

output means for outputting the calculated patent acquisition productivity to display means, printing means, recording medium, or another telecommunications device via a communication line.

Therefore, it will be possible to correct the patent application productivity based on the estimated registration ratio which is an estimate of the patents to be ultimate acquired, and the proper R&D cost and productivity creating the patents can be provided to the user. Since the important issue for an enterprise is the number of patents that it is able to ultimately acquire, by providing the patent acquisition productivity according to the present invention to

the user, the user will be able to judge the strength or weakness of development capability per technical field.

[0037]

Further, the present invention comprises:

5   display data generation means for generating display data for associating and displaying the patent application productivity and the examination request productivity in a graph or the like; and

output means for outputting the display data to display

10   means, printing means, recording medium, or another telecommunications device via a communication line.

Therefore, it will be possible to evaluate, per enterprise or per technical field, whether the R&D cost are being effectively injected and whether the inventions in the

15   filed patent applications are being requested for examination.

Moreover, it will be easy to search for enterprises that are efficiently filing patent applications in relation to the amount invested in the R&D cost and have a high examination request ratio, thereby of a posture of not wasting the

20   inventions filed, and to search for enterprises that are not sufficiently creating inventions in relation to the invested amount and have a low examination request ratio, whereby the amount invested in the research and development is not being utilized effectively.

25   [0038]

Further, the present invention comprises:

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display data generation means for generating display data for associating and displaying the patent application productivity and the patent acquisition productivity in a graph or the like; and

5   output means for outputting the display data to display means, printing means, recording medium, or another telecommunications device via a communication line.

Therefore, it will be possible to easily research whether the enterprise is effectively injecting R&D cost and

10   effectively acquiring patents.

Moreover, it will be possible to easily research an enterprise showing high patent application productivity even though the number of patent applications is small, or an enterprise have efficiently expended R&D cost in patent

15   applications, or an enterprise superior in methods of research and development.

Further, by searching for enterprises in which patent applications are becoming registered as patents in an extremely high percentage, the patent registration ratio per

20   R&D cost can be estimated to be high, and it will be possible to easily search for an enterprise that is highly likely to enter into a monopolistic state regarding its future technology.

[0039]

25   Moreover, the present invention comprises:

display data generation means for generating display data

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for associating and displaying the examination request productivity and the patent acquisition productivity in a graph or the like; and

output means for outputting the display data to display
5   means, printing means, recording medium, or another telecommunications device via a communication line.

Therefore, it will be possible to judge whether the inventions of a specified enterprise requested for examination as a result of the effective injection of R&D cost are being
10   subject to the effective registration.

Further, it will be possible to easily judge whether an enterprise is making examination requests in a high rate for the inventions that it filed and whether such inventions are patented in a high rate, and whether the enterprise is
15   patenting its inventions and taking care of such patents.

Moreover, when an enterprise has a low examination request productivity value and a low patent acquisition productivity value regarding its filed inventions, the number of examination requests will be low and the percentage of
20   obtaining patents will also be low. Therefore, it will be possible to easily judge whether an enterprise has numerous patent applications going to waste with respect to the allowance of patents, or whether an enterprise may possibly have some strategic problems regarding patent applications.
25   Further, by operating the indexes relating to patent productivity in a plurality of industries or technical fields

35

and displaying the distribution of the respective enterprises, the user will be able to easily discover the characteristics of the respective industries and the existence of characteristic enterprises in such industries. It will also be

5   possible to utilize this in judging the value or status of the displayed enterprise.

BRIEF DESCRIPTION OF THE DRAWINGS

[0040]

10   FIG. 1 is a diagram showing the overall configuration of an enterprise evaluation system;

FIG. 2 is a signal processing system block diagram of an enterprise evaluation device;

FIG. 3 is a diagram showing an example of management-

15   finance information;

FIGS. 4A and 4B are diagrams showing an example of technical information;

FIG. 5 is a chart illustrating the respective indexes of "business, profit, market value" calculated by the enterprise

20   evaluation device and the calculating formula thereof;

FIG. 6 is a chart illustrating the respective indexes of "business, profit, market value" calculated by the enterprise evaluation device and the calculating formula thereof;

FIG. 7 is a chart illustrating the respective indexes of

25   "R&D, patent" calculated by the enterprise evaluation device and the calculating formula thereof;

FIG. 8 is a chart illustrating the respective indexes of "R&D, patent" calculated by the enterprise evaluation device and the calculating formula thereof;

FIG. 9 is a chart illustrating the respective indexes of "patent portfolio" calculated by the enterprise evaluation device and the calculating formula thereof;

FIG. 10 is a chart showing a display example of a patent acquisition (registration) related index in the electrical equipment industry;

FIG. 11 is a chart showing a display example of a patent acquisition (registration) related index in the chemical industry;

FIG. 12 is a chart denoting the average years required for registration (PTMY) per enterprise in the electrical equipment industry;

FIG. 13 is a chart denoting the average years required for registration (PTMY) per enterprise in the chemical industry;

FIG. 14 is a chart denoting the calculation of indexes relating to the patent productivity of ten companies in the electrical equipment industry;

FIG. 15 is a chart denoting the calculation of indexes relating to the patent productivity of ten companies in the chemical industry;

FIG. 16 is a diagram showing the relationship of the patent application productivity (PPFI) and patent acquisition

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productivity (PPPD) in the electrical equipment industry;

FIG. 17 is a diagram showing the relationship of the patent application productivity (PPFI) and patent acquisition productivity (PPPD) in the chemical industry;

FIG. 18 is a diagram showing the relationship of the patent application productivity (PPFI) and examination request productivity (PPEX) in the chemical industry;

FIG. 19 is a diagram showing the relationship of the patent application productivity (PPFI) and examination request productivity (PPEX) in the electrical equipment industry;

FIG. 20 is a diagram showing the relationship of the patent acquisition productivity (PPPD) and examination request productivity (PPEX) in the chemical industry;

FIG. 21 is a diagram showing the relationship of the patent acquisition productivity (PPPD) and examination request productivity (PPEX) in the electrical equipment industry;

FIG. 22 is a chart showing the results of calculating the logarithm with the cumulative patent registration ratio (PTSR) as the antilogarithm upon calculating the estimated registration ratio;

FIG. 23 is a diagram plotting the natural logarithm of the cumulative patent registration ratio (PTSR) for each year elapsed and representing the regression curve thereof;

FIG. 24 is a diagram plotting the natural logarithm of the cumulative patent registration ratio (PTSR) for each year elapsed and representing the regression line thereof;

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FIG. 25 is a processing flowchart upon calculating and outputting the various indexes;

FIG. 26 is a diagram showing a display example of the display menu for selecting the type of index upon evaluating

5 the enterprise value;

FIG. 27 is a diagram showing a state where the user selected "(PT) patent acquisition (registration) related index" in the display menu for selecting the type of index;

FIG. 28 is a diagram showing an example of a case where

10 the user selected "(PS) patent stock related index" in the display menu for selecting the type of index;

FIG. 29 is a diagram showing an example of a case where the user selected "patent stock index" among the items of "(C) profit related index" in the display menu for selecting the

15 type of index;

FIG. 30 is a diagram showing an example of a case where the user selected "(C) profit related index" among the selection menu of "business, profit, market value" in the display menu for selecting the type of index;

20 FIG. 31 is a diagram showing an example of a case where the user selected "sales volume" among the items of "(C) profit related index" in the display menu for selecting the type of index;

FIG. 32 is a diagram showing a display example of an

25 enterprise value evaluation input condition setting screen for selecting the conditions of the "target document" and "reading

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of data" upon calculating the index for determining the

enterprise value;

FIG. 33 is a diagram showing a display example of an

enterprise value evaluation input condition setting screen for

5   selecting the conditions of the target industry or respective

enterprises upon calculating the index for determining the

enterprise value;

FIG. 34 is a diagram showing an output condition setting

screen of the calculated index;

10   FIG. 35 is a diagram showing a state where the user

selected "(A) investment index" in the display menu for

selecting the type of index;

FIG. 36 is a diagram showing an example where the user

selected "investment trend index" from the selection menu of

15   "(C) investment index" in the display menu for selecting the

type of index;

FIG. 37 is a diagram showing an example where the user

selected the items of "(PA) patent application related index"

in the display menu for selecting the type of index; and

20   FIG. 38 is a diagram showing an example where the user

selected "number of claims filed" from the items of "(PA)

patent application related index" in the display menu for

selecting the type of index;

25   BEST MODE FOR CARRYING OUT THE INVENTION

[0041]

Embodiments of the present invention are now explained with reference to the drawings.

[0042]

FIG. 1 is a diagram showing the overall configuration of

5   an enterprise evaluation system according to the present invention.

As shown in FIG. 1, the enterprise value evaluation system is configured from a database 20 recording various types of information such as management-finance information,

10   technical documents (in addition to patent information, numerical value information relating to utility models and technical journals), market value information (numerical value information of the market value), threshold for determining the validity of the enterprise value, determination result of

15   the validity and category based on such threshold; an enterprise evaluation device 30 for inputting various types of information such as management-finance information, technical documents and market value information and outputting the judgment results of the validity of the enterprise value; and

20   a communication network 10 such as the Internet or dedicated communication line for communicably connecting the enterprise evaluation device 30 and database 20.

[0043]

Incidentally, the database 20 may be provided inside the

25   enterprise evaluation device 30.

[0044]

41

FIG. 2 is a signal processing system block diagram of an enterprise evaluation device 30 according to the present invention.

As shown in FIG. 2, the information transmission-reception unit of the enterprise evaluation device 30 is provided with a transmission-reception means 365 (including the functions of a management-finance information acquisition means, official gazette acquisition means or output means) for transmitting and receiving information to and from another telecommunications device via the communication network 364 such as a public line or telecommunications network.

[0045]

Further, the enterprise evaluation device 30 is also provided with an input interface 371 for acquiring various types of information input by the user via the input means 370 and transmitting this to the information processing means described later, and outputting display commands to an LCD or the like based on instructions from the information processing means, a display means 372 for displaying information such as images or texts, graphs or charts, a display interface 373 (including the function of an output means) for outputting image signals for display to the display means 372 based on the command from the information processing means, and a printer interface 374 for outputting information such as images or texts, graphs or charts to a printer 32 or the like. Incidentally, the input means 370 includes input devices such

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as a keyboard, mouse, tablet and the like.

[0046]

Further, the enterprise evaluation device 30 is also
provided with a recording medium mounting unit 378 for

5   detachably mounting a recording medium 377, and a recording
medium interface 379 (including the functions of a management-
finance information acquisition means, official gazette
acquisition means or output means) for recording and reading
various types of information in and from the recording medium

10   377.   Incidentally, the recording medium 377 is a detachable
recording medium in a magnetic recording format or optical
recording format as represented by semiconductors such as a
memory card, MO, magnetic disk and so on.

[0047]

15   Moreover, the enterprise evaluation device 30 is also
provided with an information processing means 380 for
controlling the overall enterprise evaluation device 30, and a
memory 381 configured from a ROM recording programs to be
executed by the information processing means 380 and various

20   constants, or a RAM which is a recording means to become the
working area upon the information processing means 380
executing processing.

Further, the information processing means 380 is able to

25   realize the various functions of a management-finance
information acquisition means, official gazette acquisition

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means, average period required for registration calculation means, average period before examination request calculation means, number-of-inventions acquisition means, patent application productivity calculation means, number-of-

5   inventions-per-applicant acquisition means, publication in which an examination request period has passed acquisition means, estimated examination request ratio acquisition means, examination request productivity calculation means, cumulative number of patent applications acquisition means, cumulative

10   number of patent registrations acquisition means, cumulative patent registration ratio calculation means, estimated registration ratio calculation means, patent acquisition productivity calculation means, display data generation means and output means. Incidentally, instead of the information

15   processing means 380 performing all of the processing to be performed by the foregoing means, a plurality of dedicated processing devices may be provided so that the respective processing devices can share and execute such processing in order to achieve the objects of the present invention.

20   [0048]

Moreover, the enterprise evaluation device 30 is also provided with a recording means 384 such as a hard disk recording various types of information; for example, various constants relating to the processing of the enterprise

25   evaluation device 30, attribute information upon communicably connecting to a telecommunications device on a network,

connection information such as a URL (Uniform Resource

Locators), gateway information, DNS (Domain Name System),

management-finance information relating to the management of

the enterprise, technical documents relating to patents,

5   market value information, threshold for determining the

enterprise value and determination results of validity based

on such threshold; recording means interface 385 (including

the functions of a management-finance information acquisition

means, official gazette acquisition means or output means) for

10   reading information recorded in the recording means 384 and

writing information to the recording means 384; and a calendar

clock 390 for clocking the time.

[0049]

The respective peripheral circuits of the information

15   processing means 380, display interface 373, memory 381,

recording means interface 385 and calendar clock 390 in the

enterprise evaluation device 30 is connected to a bus 399, and

the respective peripheral circuits can be controlled based on

the processing program to be executed by the information

20   processing means 380.

[0050]

Incidentally, various databases of the management-finance

information, technical documents and market value information

may be stored in the recording means 384, provided by the

25   storage medium 377 such as a CD-ROM, CD-RW, DVD or MO, or

acquired from another telecommunications device (database 20

45

or the like) via the communication network 364.

[0051]

Further, the enterprise evaluation device 30 can be
realized by using various types of computers such as a
5   personal computer or workstation. Moreover, computers may be
connected via a network to share and implement the functions.

[0052]

The management-finance information acquisition means of
the transmission-reception means 365, recording means
10   interface 385, recording medium interface 379 and information
processing means 380 is capable of acquiring management-
finance information in a period to be researched from a
management-finance information database (database 20,
recording means 384, recording medium 377 or the like)
15   recording information showing the size of the enterprise to be
researched or management-finance information such as the
finance information of the enterprise.

[0053]

In addition, the technical document acquisition means of
20   the transmission-reception means 365, recording means
interface 385, recording medium interface 379 and information
processing means 380 is capable of acquiring technical
documents in an enterprise to be researched, technical field
to be researched or period to be researched from a technical
25   document database (database 20, recording means 384, recording
medium 377 or the like) recording technical documents relating

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to unexamined applications of patents or utility models which have been filed, or publications of registrations of patents or utility models which have been subject to registration and owned by the enterprise to be researched.

5   [0054]

Further, the official gazette acquisition means is capable of acquiring publications of registrations such as publications of patent registrations, publications of examined patent applications, publications of examined utility model

10   applications or publications of utility model registrations, or unexamined publications such as publications of unexamined patent applications, published Japanese translations of PCT international applications for patents, publications of unexamined utility model applications or published Japanese

15   translations of PCT international applications for utility models from a technical document database (database 20, recording means 384, recording medium 377 or the like).

[0055]

Moreover, the output means of the transmission-reception

20   means 365, recording means interface 385, recording medium interface 379, printer interface 374 and information processing means 380 is capable of outputting various indexes such as the average period required for registration, average period before examination request, patent application

25   productivity, examination request productivity or patent acquisition productivity to a display means, printing means,

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recording medium, or another telecommunications device via a communication line.

[0056]

Further, the output means of the transmission-reception means 365, recording means interface 385, recording medium interface 379, printer interface 374 and information processing means 380 is capable of outputting display data for associating and displaying the patent application productivity and examination request productivity, display data for associating and displaying the patent application productivity and patent acquisition productivity, and display data for associating and displaying the examination request productivity and patent acquisition productivity to a display means, printing means, recording medium, or another telecommunications device via a communication line.

[0057]

Moreover, the average period required for registration calculation means of the information processing means 380 and the like is capable of calculating a required registration period for individual applications by subtracting the filing date from the registration date indicated in the acquired publications of registrations, calculating an accumulated required registration period by counting the calculated required registration period for all patents subjected to the registration, and calculating an average period required for registration through dividing the accumulated required

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registration period by the total number of patents subjected
to the registration.

[0058]

Further, the average period required for registration
calculation means of the information processing means 380 and
the like is capable of calculating a required registration
period for individual applications by subtracting the filing
date from the registration date indicated in the acquired
publications of registrations, calculating an accumulated
required registration period by counting the calculated
required registration period for all patents subjected to the
registration, and calculating an average period required for
registration through dividing the accumulated required
registration period by the total number of patents subjected
to the registration and the average number of days of one year
or one month.

[0059]

Moreover, the average period before examination request
calculation means of the information processing means 380 and
the like is capable of calculating a period before examination
request for individual applications by subtracting the filing
date from the date of examination request described in the
acquired unexamined publications or publications of
registrations, calculating an accumulated period before
examination request by counting the calculated period before
examination request for all patents requested for examination,

and calculating an average period before examination request through dividing the accumulated period before examination request by the total number of patents requested for examination.

5   [0060]

Further, the average period before examination request calculation means of the information processing means 380 and the like is capable of calculating a period before examination request for individual applications by subtracting the filing

10   date from the date of examination request described in the acquired unexamined publications or publications of registrations, calculating an accumulated period before examination request by counting the calculated period before examination request for all patents requested for examination,

15   and calculating an average period before examination request through dividing the accumulated period before examination request by the total number of patents requested for examination and the average number of days of one year or one month.

20   [0061]

Moreover, the number-of-inventions acquisition means of the information processing means 380 and the like is capable of acquiring the number of patent applications or utility model applications or number of inventions such as the number

25   of claims from the acquired unexamined publications or publications of registrations.

[0062]

Moreover, the number-of-inventions-per-applicant acquisition means of the information processing means 380 and the like is capable of acquiring the number of patent applications or utility model applications or the number of claims from each of the acquired unexamined publications or publications of registrations, acquiring the number of applicants indicated in each of the acquired publications, and acquiring the number of inventions per unit of applicants through dividing the number of patent applications or utility model applications or the number of claims by the number of applicants.

[0063]

Further, the number-of-inventions acquisition means of the information processing means 380 and the like is capable of acquiring the total number of inventions by counting the acquired number of inventions per unit of applicants for all of the acquired publications.

[0064]

Moreover, the patent application productivity calculation means of the information processing means 380 and the like is capable of calculating the number of inventions per unit of R&D cost as the patent application productivity through dividing the acquired number of inventions by the R&D cost.

[0065]

Moreover, the patent application productivity calculation

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means of the information processing means 380 and the like is capable of calculating the number of inventions per unit of R&D cost as the patent application productivity through dividing the acquired number of inventions by the R&D cost.

5   [0066]

Further, the estimated examination request ratio acquisition means of the information processing means 380 and the like is capable of acquiring from a database the number of patent applications and the number of examination requests

10   made in the applications from the unexamined publications or publications of registrations based on patent applications or utility model applications filed within the third specified period, and calculating the estimated examination request ratio through dividing the acquired number of examination

15   requests by the acquired number of patent applications.

[0067]

Moreover, the examination request productivity calculation means of the information processing means 380 and the like is capable of calculating the examination request

20   productivity by multiplying the calculated patent application productivity with the estimated examination request ratio.

[0068]

Further, the publication in which an examination request period has passed acquisition means of the information

25   processing means 380 and the like is capable of acquiring from a database the unexamined publications or publications of

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registrations based on patent applications or utility model

applications filed by the specified enterprise within a third

specified period so that the examination request period pass

before tabulation.

5   [0069]

Further, the estimated examination request ratio

acquisition means of the information processing means 380 and

the like is capable of acquiring from a database the number of

patent applications and the number of examination requests

10   made in the applications from the unexamined publications or

publications of registrations based on patent applications or

utility model applications filed within the third specified

period, and calculating the estimated examination request

ratio through dividing the acquired number of examination

15   requests by the acquired number of patent applications.

[0070]

Moreover, the examination request productivity

calculation means of the information processing means 380 and

the like is capable of calculating the examination request

20   productivity by multiplying the calculated patent application

productivity with the estimated examination request ratio.

[0071]

Moreover, the cumulative number of patent applications

acquisition means of the information processing means 380 and

25   the like is capable of acquiring, for each predetermined

period, the cumulative number of patent applications filed by

a specified enterprise within a specified period based on the acquired unexamined publications or publications of registrations.

[0072]

Further, the cumulative number of patent registrations acquisition means of the information processing means 380 and the like is capable of acquiring, for each predetermined time, the cumulative number of patent registrations of patents subjected to registration by each predetermined time based on the acquired publications of registrations.

[0073]

Moreover, the cumulative number of patent registrations acquisition means of the information processing means 380 and the like is capable of calculating, for each predetermined time, the cumulative patent registration ratio through dividing the acquired cumulative number of patent registrations by the cumulative number of patent applications.

[0074]

Further, the estimated registration ratio calculation means of the information processing means 380 and the like is capable of calculating, for each predetermined time, the natural logarithm of the cumulative patent registration ratio and calculating the regression line or regression curve thereof, and calculating the future estimated registration ratio by substituting the calculated average period required for registration for the calculated regression line or

regression curve.

[0075]

Moreover, the patent acquisition productivity calculation means of the information processing means 380 and the like is
5 capable of calculating the patent acquisition productivity by multiplying the calculated patent application productivity with the estimated registration ratio.

[0076]

Further, the display data generation means of the
10 information processing means 380 and the like is capable of creating display data for displaying the respective indexes of patent application productivity and examination request productivity, patent application productivity and patent acquisition productivity, and examination request productivity
15 and patent acquisition productivity in a chart format or graph format.

[0077]

FIG. 3 is a chart representing an example of management-finance information recorded in the recording means of the
20 database 20 or the like.

As shown in FIG. 3, management-finance information includes information showing the size of the company, information showing the financial information of the company, and combined information of the company calculated by
25 combining the various types of information of the company. Incidentally, as the data of management-finance information,

the annual security report of the company to be researched, and information acquired from commercial databases provided by newspaper publishers and research institutes may be used.

[0078]

5   Information showing the size of the company includes the number of employees, number of officers, capital, number of plants, number of offices, ground floor area, total floor area, ownership ratio of premises, ownership ratio of building, number of employees (consolidated basis), number of officers
10   (consolidated basis), capital (consolidated basis), number of plants (consolidated basis), number of offices (consolidated basis), ground floor area (consolidated basis), total floor area (consolidated basis), ownership ratio of premises (consolidated basis) or ownership ratio of building
15   (consolidated basis).

[0079]

The financial information of the company includes the sales volume, sales profit, operating profit, sales profit ratio, operating profit ratio, total market value to total
20   assets ratio, total market value to stockholders' equity ratio, total market value to sales volume ratio, total market value to gross operating profit ratio, total market value to operating profit ratio, gross operating profit to total assets ratio, gross operating profit to stockholders' equity ratio,
25   operating profit to total assets ratio, operating profit to stockholders' equity ratio, stockholders' equity ratio,

balance of total market value and stockholders' equity, R&D cost, R&D cost to sales volume ratio, R&D cost to gross operating profit ratio, gross operating profit ratio, R&D cost to operating profit ratio or gross operating profit.

5   [0080]

Moreover, finance information of the company includes total assets, tangible fixed assets, amount of capital investment, depreciation costs, patent royalty income, financial assets (liquid assets and liquid liabilities),

10   interests paid, discounts, long-term prime rate (long-term borrowing rate), short-term prime rate, interest on bonds, 10-year government bond yield ratio, personnel costs (including officers' compensation and labor costs), welfare expenses, capital stock, total number of outstanding shares, stock price

15   (Nikkei Stock Average) or taxes and public charges.

[0081]

The combined information of the company includes the sales volume per employee, R&D cost per employee, sales profit per employee, operating profit per employee, gross operating

20   profit per employee and so on.

[0082]

The gross operating profit is now explained.

Pursuant to the revision of the accounting standards, as a general rule in Japan, R&D cost must be recorded entirely as

25   expenses in the settlement of accounts after the term ending March 2000. Conventionally, there were numerous companies that

did not disclose the breakdown of the R&D cost included in the manufacturing costs and general administrative expenses. Nevertheless, after the enforcement of these regulations, the amount of R&D cost pertaining to the calculation of profits

5   and losses became clear. Thereupon, for the purpose of multilaterally analyzing the actual status of such R&D cost of the company, and index referred to as the "gross operating profit" has been developed.

This is an estimate of hypothetical profits (main

10   business excluding research and development activities; that is, gross profit generated from the manufacture and sale activities) sought by adding the R&D cost to the operating profit. As a result of the R&D cost being entirely recorded as expenses, upon calculating profits and losses, the more

15   research and development activities are positively engaged, the more operating profit will be compressed. Thus, while the importance of technology development (intellectual property) is being discussed, there is a problem in that it is difficult to grasp the actual condition of the profitability of the

20   company only from the perspective of operating profit. The foregoing estimate is considered to provide a perspective to this problem.

This gross operating profit is an index that is positioned roughly between the sales profit and operating

25   profit. By using the gross operating profit simultaneously with the sales profit and operating profit, it will be

possible to grasp the profitability of the company from many angles.

[0083]

The sales profit is the gross margin sought by subtracting the manufacturing cost from the sales volume. Nevertheless, some R&D cost are included in manufacturing costs, whereas others are included in general administrative expenses. Thus, strictly speaking, the gross operating profit cannot be called a profit index positioned between the sales profit and operating profit. The relationship of the gross operating profit and other profit indexes can be represented with the formula indicated below.

Gross operating profit
= (sales profit) + (R&D cost included in the manufacturing costs) - {(general administrative expenses) - (R&D cost included in the general administrative expenses)}
= operating profit + R&D cost

[0084]

FIGS. 4A and 4B are diagrams showing an example of a technical document recorded in a recording means of the database 20 or the like.

As shown in FIGS. 4A and 4B, technical documents contain patent documents such as filing information and registration information of patents and utility models. As data of technical documents, for instance, the Industrial Property

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Digital Library database of the Japanese Patent Office,

information relating to patents and utility models acquired

from CD-ROM gazettes or other technical journals may be used.

[0085]

5   Application information of the present invention includes,

for instance, per enterprise, the following: the filing date,

application number, title of the invention, inventors,

applicants, scope of claims, abstract, IPC, FI, F Term, agents,

publication date, publication number, existence of request for

10   examination, date of request for examination, priority date,

priority number, date of publication of translations of PCT

international application, number for publication of

translations of PCT international application, date of

domestic re-publication of PCT international application,

15   number for domestic re-publication of PCT international

application, international filing date, international

application number, international publication date,

international publication number, designated country, number

of filings, number of examinations requested, number of

20   filings based on IPC, number of filings based on keywords,

number of claims filed, years spent on examination requests,

number of inventors, number of applicants (number of joint

applications), number of domestic priority-claiming

applications, number of domestic priority bases claimed in

25   applications, number of priority bases from foreign countries,

number of applications in which an exception to loss of

novelty is requested, number of applications in which

examination is requested before laid-open, number of

divisional applications, number of withdrawn/abandoned

applications, number of converted applications, number of

5   expedited examinations, number of filings in each foreign

country, number of inventors in each foreign country, number

of applicants in each foreign country, number of priority-

claiming applications in each foreign country, and number of

priority bases claimed in applications in each foreign country

10   or number of divisional applications in each foreign country.

[0086]

Further, registration information of the present

invention includes, for example, per enterprise, the

following: the registration date, issue date of registration,

15   registration number, scheduled day of expiration of right,

date of publication of examined application, publication

number of examined application, annual maintenance fee payment

status, number of final decisions for rejection, date of final

decision for rejection, number of claims decided to be finally

20   rejected, number of appeals against final decision for

rejection, number of abandoned/withdrawn applications after

request for examination, number of abandoned/withdrawn claims

after request for examination, number of invalidation trials,

appeal/trial number, date of decision to appeal/trial, number

25   of claims demanded for invalidation trial, number of appeals

to dismissals of amendment or trials for correction, number of

oppositions, number of claims demanded for opposition,

inventors of registered patent, number of inventors of

registered patent, applicants of registered patent, references

cited, number of registrations, number of claims registered,

5   number of expired patents after registration, years spent from

application to registration, patent registration rate, patent

allowance rate, years spent from request for examination to

registration, number of applications in which preferential

examination is conducted, number of rejections issued, number

10   of amendments filed, number of amendments filed for

formalities, number of registrations for creating patent right,

number of registrations for extending term of patent right,

number of transferred patents, number of registrations in each

country, years required for registration in each country,

15   years spent on examination in each country, number of

rejections issued in each country, number of amendments filed

in each country, number of amendments filed for formalities in

each country, number of oppositions filed in each country,

number of applications in which preferential examination is

20   conducted or number of rejections issued.

[0087]

The respective indexes upon evaluating an enterprise

based on the number of inventions are now explained.

[0088]

25   Generally, it is possible to judge that an enterprise

with a large number of inventions such as the number of patent

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applications or the number of claims contained in patent applications is allotting their budget to the development of new products, is active in product development toward the future, and is expected to expand its business or improve its

5   profits in the future.

[0089]

Industrial products in recent years are equipped with numerous functions for increasing the value as the product itself, and the technical fields required for product

10   development are broadening in accordance with the function or performance of the product. Further, when designing the product by improving the function or performance in order to improve the competitive position, development costs thereof will also rise considerably, and a substantial amount of

15   funding and personnel will also become required.

[0090]

If an enterprise that is creating numerous technical ideas for the development of new products and filing patent applications has sufficient development funds, it is possible

20   to judge that this enterprise is expected to expand its business or improve its profits in the future in light of the exclusive right upon obtaining the patent.

[0091]

Further, investors and banks wish to invest in

25   enterprises with a promising future, and students and mid-career engineers wish to be employed in an enterprise with

ingenious technical strength.

[0092]

The present invention provides several indexes that will become a criterion for investors, banks, engineers and others to search for enterprises with ingenious technical strength and a promising future among a plurality of enterprises. Incidentally, in the present invention, although explanation is given regarding enterprises that filed patent applications, indexes may also be calculated for patent applications filed by natural persons in addition to enterprises.

[0093]

Further, there are many cases where a plurality of novel inventions are divided and claimed in a plurality of claims in a single patent application. Therefore, it is also possible to consider the number of claims of a patent application to be the number of inventions. Particularly in recent years, the number of claims included in a single patent application is of an increasing trend. Nevertheless, it has been statistically proven that the number of claims included in a single patent application have differing average values and trends depending on the technical field or business category, or per enterprise. Thus, if the trend analysis of patent applications of the respective enterprises, comparative assessment with other companies and analysis of technical strength are conducted simply with the number of applications, there may be some cases where this may cause a considerable misunderstanding.

Due to the foregoing reasons, the patent application trend and technical trend of the respective companies in the embodiments of the present invention are captured from both aspects of the number of patent applications and the number of claims in a

5　patent application.

[0094]

Incidentally, in the foregoing example, although the number of patent applications and the number of claims in a patent application are used, the present invention is not

10　limited thereto, and, as the number of inventions, the number of patent or utility model registrations, number of claims registered, number of examination requests, number of claims requested for examination, number of final decisions for registration, number of claims decided to be registered,

15　number of final decisions for rejection, number of claims decided to be rejected, number of demands for trial, number of claims demanded for trial and so on may also be used according to the intended purpose.

[0095]

20　Moreover, a value combining two or more number of inventions, for instance, (number of registrations/number of examination requests) may also be used according to the intended purpose.

[0096]

25　Further, although a case where IPC sub-classes are used as the technical field of the invention was described in the

foregoing example, technical information is not limited to IPC

sub-classes, and the classifications of IPC sections, classes,

sub-classes, main groups, sub groups, F terms, FI, facets,

keywords contained in the patent documents may also be used

5   according to the intended purpose.

[0097]

FIG. 5 and FIG. 6 are charts illustrating examples of the

respective indexes of "business, profit, market value"

calculated by the enterprise evaluation device and the

10   calculating formula thereof.

As shown in FIG. 5 and FIG. 6, as the index groups, "(A)

investment", "(B) management-finance analysis", "(C) profit

related", "(D) excess profit analysis", "(M) market value

related", and "(PE) patent profitability" are provided, and

15   the names and outline of the respective indexes and the

calculating formula thereof are indicated in each of these

groups.

[0098]

Further, FIG. 7 and FIG. 8 are charts illustrating

20   examples of the index of "R&D, patent" calculated by the

enterprise evaluation device.

As shown in FIG. 7 and FIG. 8, as the index groups, "(R)

research and development related", "(PA) patent application

related", "(PB) examination request related", "(PT) patent

25   acquisition (registration) related", "(PP) patent

productivity" and "(PS) patent stock related" are provided,

and the names and outline of the respective indexes and the calculating formula thereof are indicated in each of these groups.

[0099]

FIG. 9 is a chart illustrating an example of the "patent portfolio" index calculated by the enterprise evaluation device and the calculating formula thereof.

As shown in FIG. 9, as the index groups, "(PAP) patent portfolio analysis", "(PAK) characteristic keywords", and "(PSI) patent similarity ratio analysis" are provided, and the names and outline of the respective indexes and the calculating formula thereof are indicated in each of these groups.

[0100]

Next, the respective indexes pertaining to the present invention are explained.

[0101]

In the present invention, among the respective indexes shown in FIG. 8, the two broad classifications below and the respective indexes included in the lower hierarchy are explained. Further, abbreviation of the respective indexes is defined as "patent acquisition (registration) related index (PT)", "patent productivity index (PP)" and so on.

[0102]

1.   Patent acquisition (registration) related index (PT)

(1.1) Number of patent registrations (number of patents

granted; PTRD)

(1.2) Number of claims registered (PTCL)

(1.3) Average years required for registration (years to patent granted (average); PTMY)

5 (1.4) Average years before examination request (PBMY)

(1.5) Patent registration ratio (patent granted ratio to number of applications; PTRR)

(1.6) Cumulative number of patent registrations (patent granted stock; PTSP)

10 (1.7) Cumulative number of patent applications (patent application stock; PTSA)

(1.8) Cumulative patent registration ratio (patent granted stock ratio to application stock; PTSR)

(1.9) Patent allowance ratio (patent granted ratio to number of 15 examination requests; PTER)

(1.10)   Cumulative patent allowance ratio (patent granted stock ratio to examination request stock; PTSE)

(1.11)   Number of effective patents (PTEF)

(1.12)   Effective patent remaining ratio (PTEP)

20 2.   Patent productivity index (PP)

(2.1) Patent application productivity (PPFI)

(2.2) Examination request productivity (PPEX)

(2.3) Estimated examination request ratio (PPAR)

(2.4) Patent acquisition productivity (patent granted 25 productivity; PPPD)

(2.5) Estimated registration ratio (PPPR)

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[0103]

Among the respective indexes listed above, the definition
of patent acquisition (registration) related index (PT) is
explained below.

[0104]

1.   Patent acquisition (registration) related index (PT)

(1.1) Number of patent registrations (number of patents
granted; PTRD)

Number of patent registrations (PTRD) is an index
representing the number of patents of a specified enterprise
subjected to registration within a specified period, and may
also be considered to be the number of inventions. The
calculating formula thereof is shown below (Formula 1).

Number of patent registrations (PTRD)

= number of patents of a specified enterprise subjected to
registration within a specified period …(Formula 1)

Provided,

"Within a specified period" shall mean within a designated
period such as within the fiscal 1999, within the fiscal 2000,
within the year 2001 (within 1 year), within a quarter and so
on; and

"Number of patents" shall include the number of registered
utility models in addition to the patents subjected to
registration.

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[0105]

Further, number of patent registrations (PTRD) is obtained by acquiring and accumulating the publications of unexamined patent applications issued by the Patent Office. A joint application may be accumulated as one (1) application. However, it is also possible to accumulate a number obtained through dividing one (1) by the number of joint applicants.

[0106]

An enterprise having a large value for the number of patent registrations (PTRD) in a specified period can be considered as an enterprise generally focusing on research and development.

[0107]

Nevertheless, since patent applications may largely differ depending on the business category, an enterprise having a large value for the number of patent registrations (PTRD) within a specified period cannot necessary be judged as having strong development capability.

[0108]

(1.2) Number of claims registered (PTCL)

The number of claims registered (PTCL) is an index showing the total number of claims of patents of a specified enterprise subjected to registration within a specified period. The calculating formula thereof is shown below (Formula 2).

Number of claims registered (PTCL)

70

= total number of claims of patents of a specified enterprise subjected to registration within a specified period …(Formula 2)

[0109]

Number of claims registered (PTCL) can be considered as the number of inventions included in the patents subjected to registration. Generally speaking, an enterprise showing a large value for this number of claims registered (PTCL) can be judged as creating numerous inventions, but the number of claims may differ depending on the business category. Therefore, even though an enterprise has a small value for the number of claims registered (PTCL), it is not necessarily the case that such enterprise has a small number of inventions. Incidentally, although the number of patent applications decreased after the adoption of the multiple claim system, the number of claims is of a gradually increasing trend. From this perspective, instead of evaluating enterprises based on patent applications or number of registrations, there is a higher possibility of being able to grasp the accurate number of inventions by evaluating enterprises based on the number of claims filed or number of claims registered.

[0110]

(1.3) Average years required for registration (years to patent granted (average); PTMY)

Average years required for registration (PTMY) is an index showing the average number of years from filing to

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registration for patents that were registered within a specified period in the name of a specified enterprise. The calculating formula thereof is shown below (Formula 3).

5   Average years required for registration (PTMY)

$$= [\Sigma_{n=1}^{N}\{(\text{patent registration date}) - (\text{patent filing date})\}]$$

/{(number of patent registrations) × (average number of days in a year)} …(Formula 3)

10   Provided,

n: Respective patents of a specified enterprise subjected to registration within a specified period

N: Total number of patents of a specified enterprise subjected to registration within a specified period

15   (= number of patent registrations (PTRD))

[0111]

Patent applications not possessing much inventive step or which cannot expect much profit in terms of product strategy; that is, patent applications which were most likely filed for

20   defensive purposes often request examination after the lapse of a reasonable period of time from the filing thereof in order to assess the trend of products. Meanwhile, strategic filings for obtaining patents ahead of time often request examination at a relatively early stage.

25   [0112]

Therefore, the average years required for registration of

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the respective enterprises from filing to registration can be used to see whether this is reflecting that the patent applications of the respective enterprises are playing an important strategic role, or being filed for defensive

5   purposes. Thus, patents that were acquired at an early stage can be considered as being important inventions of that enterprise.

[0113]

And, with the present invention, as shown in (Formula 3)

10   above, the official gazette acquisition means acquires from a database the publications of patent registrations subjected to registration among the patent applications filed by a specified enterprise within a specified period. Further, the average period required for registration calculation means

15   calculates a required registration period for individual applications by subtracting the filing date from the registration date indicated in the acquired publications of registrations, calculating an accumulated required registration period by counting the calculated required

20   registration period for all patents subjected to the registration, and calculating an average period required for registration through dividing the accumulated required registration period by the total number of patents subjected to the registration and the average number of days of one year

25   or one month (average years required for registration (PTMY) is calculated here).

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[0114]

Further, upon calculating the average years required for registration (PTMY), in place of performing the calculation based on patent applications filed by a specified enterprise within a specified period, the average years required for registration (PTMY) may be calculated based on patent applications of a predetermined technical field filed by a specified enterprise within a specified period. Further, in place of calculating the average period required for registration through dividing the accumulated required registration period by the total number of patents subjected to the registration and average number of days of one year or one month, the average period required for registration may be calculated through dividing the accumulated required registration period only by the total number of patents subjected to the registration.

[0115]

The average years required for registration (PTMY) can be calculated and displayed upon classification per technical area such as based on enterprises, based on workplaces, based on inventors, based on IPC and the like, and the user will be able to know which technical field the enterprise to be researched is laying emphasis, or which technical field the enterprise to be researched is defensively positioning the inventions. Incidentally, the index of average years required for registration (PTMY) does not necessarily indicate that an

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enterprise has superior technical development strength the smaller the value thereof, and, therefore, value of the average years required for registration (PTMY) being small does not have any significant meaning.

5   [0116]

Moreover, for inventions that must be patented, it may take a long period of time for a patent to be granted as a result of trial proceedings and the like. Further, among the patents that are granted promptly, there are inventions with

10 unequalled novelty, but these may include inventions that will not be of much use in terms of product strategy, and it is necessary to keep this in mind upon tabulation and judgment.

[0117]

(1.4) Average years before examination request (PBMY)

15   Average years before examination request (PBMY) is an index showing the average number of years spent for patent applications of a specified enterprise requesting examination within a specified period from the filing thereof to such examination request. The calculating formula thereof is shown

20 below (Formula 4).

Average years before examination request (PBMY)

$= [\Sigma_{n=1}^{N}\{$ (examination request date) $-$ (patent filing date)$\}]$

$/\{$ (number of examination requests) $\times$ (average number of days

25 in a year)$\}$ ...(Formula 4)

Provided,

m: Respective patent applications of a specified enterprise requesting examination within a specified period

M: Total number of patent applications of a specified

5   enterprise requesting examination within a specified period

[0118]

Upon calculating the average years before examination request (PBMY) based on products or based on IPC of the respective companies, it is often the case that patent

10   applications of a strategically important technical field to be patented promptly are requested for examination at a relatively early stage.

[0119]

Thus, with the present invention, as shown in (Formula 4)

15   above, the official gazette acquisition means acquires from a database the unexamined publications requested for examination or publications of patent registrations subjected to registration among the patent applications filed by a specified enterprise within a specified period. And, the

20   average period before examination request calculation means calculates a period before examination request for individual applications by subtracting the filing date from the date of examination request described in the acquired unexamined publications or publications of registrations, calculating an

25   accumulated period before examination request by counting the calculated period before examination request for all patents

requested for examination, and calculating an average period

before examination request through dividing the accumulated

period before examination request by the total number of

patents requested for examination and the average number of

5 days of one year or one month (average years before

examination request (PBMY) is calculated here).

[0120]

Further, upon calculating the average years before

examination request (PBMY), in place of performing the

10 calculation based on the patent applications filed by a

specified enterprise within a specified period, the average

years required for registration (PTMY) may be calculated based

on the patent applications of a predetermined technical field

filed by a specified enterprise within a specified period.

15 Moreover, in place of calculating the average years before

examination request through dividing the accumulated period

before examination request by the total number of patents

requesting examination and average number of days of one year

or one month, the average period before examination request

20 may be calculated through dividing the accumulated period

before examination request by only the total number of patents

requesting examination.

[0121]

The average period before examination request (PTMY) can

25 be calculated and displayed upon classification per technical

area such as based on enterprises, based on workplaces, based

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on inventors, based on IPC and the like, and the user will be able to know which technical field the enterprise to be researched is laying emphasis, or which technical field the enterprise to be researched is defensively positioning the

5   inventions.

[0122]

(1.5) Patent registration ratio (patent granted ratio to number of applications; PTRR)

Patent registration ratio (PTRR) is an index showing the

10   ratio of number of patent registrations subjected to registration among the patent applications of a specified enterprise filed within a specified period. The calculating formula thereof is shown below (Formula 5).

15   Patent registration ratio (PTRR)

= (number of patent registrations subjected to registration among the patent applications of a specified enterprise filed within a specified period) / (number of patent applications filed within the specified period) …(Formula 5)

20   [0123]

According to the patent registration ratio defined in (Formula 5) above, among the number of patent applications filed within the respective specified periods, the number of patents subjected to registration will change with the course

25   of time. Here, the initial registrations are counted, and consideration is not given to the extinguishment of patents

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based on decision for cancellation due to opposition or invalidation decision due to invalidation trials. Thus, the patent registration ratio will always increase each year, and the patents that have completed the registration will be

5   converged into a fixed value.

[0124]

However, the patent registration ratio after the lapse of the end of the examination request period and the period required for examination will become a maximum value, and will

10   not increase thereafter. It is possible to judge that enterprises showing a relatively large value for the patent registration ratio are making examination requests at an extremely early stage, and are strategically and actively acquiring patents.

15   [0125]

(1.6) Cumulative number of patent registrations (patent granted stock; PTSP)

Cumulative number of patent registrations (PTSP) is an index showing cumulative number of patent registrations

20   subjected to registration by a predetermined time among the patent applications filed by a specified enterprise within a specified period. The calculating formula thereof is shown below (Formula 6).

25   Cumulative number of patent registrations (PTSP)

= cumulative number of patent registrations subjected to

registration by a predetermined time among the patent
applications filed by a specified enterprise within a
specified period …(Formula 6)

5   Provided,

"Specified period" shows a period such as from January 1, 1994
to December 31, 1996

"Predetermined time" shows the time such as the date of
tabulation, the last day of the year 1999, the last day of the
10   year 2000 or the last day of the year 2001

[0126]

Generally, cumulative number of patent registrations
(PTSP) includes patents that lapsed due to the expiration of
its term. However, patent rights may be subtracted based on
15   those that were extinguished as a result of decision for
cancellation due to opposition or invalidation decision due to
invalidation trials, or patent rights may be subtracted based
on those that were extinguished due to abandonment, withdrawal
or rejection. Further, the number of patent registrations
20   could be increased when subjected to registration as a patent
as a result of filing an appeal against the decision of
rejection, but this is omitted here. It will be possible to
judge that enterprises having a large value for the number of
patent registrations (PTSP) are promptly making examination
25   requests for patent applications and have acquired numerous
patents.

80

[0127]

In the embodiment of the present invention, upon counting the cumulative number of patent registrations (PTSP), the patent applications filed in 1994 onward up to a predetermined time when publications and registrations are available in the Japanese Patent Office's CD-ROM gazettes were counted regarding the patents subjected to registration. If the data of patent publications and registrations can be obtained, these may be counted from an older year. Further, this is not limited to 1994 onward, and the respective indexes may be calculated by counting the data from a new year such as 2000 onward. When the cumulative number of patent registrations (PTSP) is counted from a recent year as described above, since a predetermined period will be required from the filing of patent applications to the allowance thereof, there are cases where the number of patent registrations (PTRD) may be calculated as a greater value.

[0128]

(1.7) Cumulative number of patent applications (patent application stock; PTSA)

Cumulative number of patent applications (PTSA) is an index showing the cumulative number of patent applications filed by a specified enterprise within a specified period. The calculating formula thereof is shown below (Formula 7).

Cumulative number of patent applications (PTSA)

81

= cumulative number of patent applications filed by a specified enterprise within a specified period ...(Formula 7)

[0129]

(1.8) Cumulative patent registration ratio (patent granted stock ratio to application stock; PTSR)

Cumulative patent registration ratio (PTSR) is an index showing the ratio of the cumulative number of patent applications (PTSA) and cumulative number of patent registrations. The calculating formula thereof is shown below (Formula 8).

Cumulative patent registration ratio (PTSR)
= (Cumulative number of patent registrations (PTSP))
/ (Cumulative number of patent applications (PTSA)) ...(Formula 8)

[0130]

In the present embodiment, cumulative patent registration ratio (PTSR) and cumulative number of patent applications (PTSA) are calculated by counting the applications filed in 1994 onward when publications and registrations are available in the Japanese Patent Office's CD-ROM gazettes. If the data of patent publications and registrations can be obtained, these may be counted from an older year. Further, this is not limited to 1994 onward, and the respective indexes may be calculated by counting the data from a new year such as 2000 onward.

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[0131]

(1.9) Patent allowance ratio (patent granted ratio to number of examination requests; PTER)

Patent allowance ratio (PTER) is an index showing the ratio of the number of examination requests made by a specified enterprise within a specified period (regardless of the timing of filing) and the number of patent registrations subjected to registration. The calculating formula thereof is shown below (Formula 9).

Patent allowance ratio (PTER)

= (number of patent registrations subjected to registration among the number of examination requests made by a specified enterprise within a specified period) / (number of examination requests made within a specified period) …(Formula 9)

[0132]

Since this is a patent allowance ratio of patent applications that requested examination within a specified period (within each fiscal year, for instance), the patent allowance ratio (PTER) within a specified period will generally increase with the course of time. Nevertheless, after the lapse of the period required for examination, the patent allowance ratio (PTER) regarding the applications for that year will be converged and become a maximum value, and will not increase thereafter. Upon calculating the patent allowance ratio, patent rights may be subtracted based those

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that were extinguished as a result of the decision for cancellation due to opposition or invalidation decision due to invalidation trials from the numerator.

[0133]

5   The value of the patent allowance ratio (PTER) will change each fiscal year as described above. The period required for examination will largely differ based on the technical field or subject matter of the invention, examination process and so on of the respective inventions,

10   but the period from examination request to the first action is generally said to be roughly 2 years. Therefore, when assuming that a decision will be rendered within 3 years from the examination request, among the patent allowance ratio relating to the examination request of 4 years from 1999 to 2002 shown

15   in the present embodiment, the patent allowance ratio pertaining to the examination requests made in 1999 are presumed to be near a maximum value. Further, the patent allowance ratio relating to the examination requests made in 2002 is presumed to increase up until 2005 to 2006. Therefore,

20   when 2004 is set as the deadline for acquiring publication data, it is possible to consider that enterprises having a relatively large patent. allowance ratio of patent applications requested for examination in 1999 are enterprises having a high probability of obtaining patents on the patent

25   applications that requested examination.

[0134]

(1.10)   Cumulative patent allowance ratio (patent granted

stock ratio to examination request stock; PTSE)

        Cumulative patent allowance ratio (PTSE) is an index

showing the ratio of the cumulative patent registration ratio

5   and cumulative number of examination requests. The calculating

formula thereof is shown below (Formula 10).

Cumulative patent allowance ratio (PTSE)

= (cumulative number of patent registrations)

10   / (cumulative number of examination requests) …(Formula 10)

        [0135]

        Cumulative patent allowance ratio (PTSE) is an index

showing the ratio of how many patents that requested

examination were granted. Therefore, the cumulative patent

15   allowance ratio (PTSE) will increase with the course of time.

        [0136]

        The index of cumulative patent allowance ratio (PTSE) is

also calculated by counting the patent applications filed in

1994 onward up to a predetermined time when publications and

20   registrations are available in the Japanese Patent Office's

CD-ROM gazettes, and the cumulative number of examination

requests from 1997 onward having sufficient statistical data

are calculated as the cumulative patent allowance ratio (PTSE)

for each predetermined time such as at the end of each

25   business year. If the data of patent publications and

registrations of older years can be obtained, these may be

counted from an older year. Further, this is not limited to
1994 onward, and the respective indexes may be calculated by
counting the data from a new year such as 2000 onward.

[0137]

5 (1.11)   Number of effective patents (PTEF)

Number of effective patents (PTEF) is an index showing
the number of effective patents excluding the patents that
lapsed within a specified period among the number of patents
(number of patent registrations (PTRD)) of a specified
10 enterprise subjected to registration within a specified period.
The calculating formula thereof is shown below (Formula 11).

Number of effective patents (PTEF)
= (number of patent registrations (PTRD)) - (number of patents
15 that lapsed within a specified period) ...(Formula 11)

[0138]

Number of effective patents (PTEF), for example, is an
index showing the ratio of patents existing at the nearest
term end among the patents registered in the respective years.
20 Generally speaking, since patent rights will extinguish with
the course of time, the number of effective patents (PTEF)
tend to decrease within the respective specified periods.

[0139]

By calculating and comparing the number of effective
25 patents (PTEF) based on each enterprise and each business year,
it will be possible to guess the technical strength protected

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by patents of the respective enterprises. Needless to say, it will be possible to judge that enterprises with many patents have strong technical strength. Nevertheless, since the index of number of effective patents (PTEF) does not give consideration to the subject matter or effectiveness of the patented invention, it is not possible to judge whether the patented invention is an extremely strong patent that will generate enormous profits to the company. Therefore, although an enterprise having a high numerical value for the number of effective patents (PTEF) cannot necessarily be judged as a quality company, this can be sufficiently used as one indication of enterprise evaluation under common conditions.

[0140]

(1.12)   Effective patent remaining ratio (PTEP)

Effective patent remaining ratio (PTEP) is an index showing the ratio of how many effective patents exist among the patents of a specified enterprise subjected to registration within a specified period. The calculating formula thereof is shown below (Formula 12).

Effective patent remaining ratio (PTEP)

= (number of effective patents (PTEF))

/ (number of patent registrations (PTRD)) …(Formula 12)

[0141]

FIG. 10 and FIG. 11 show display examples of the patent acquisition (registration) related index according to the

present invention.

FIG. 10 is a chart showing a display example of a patent acquisition (registration) related index in the electrical equipment industry, and FIG. 11 is a chart showing a display

5   example of a patent acquisition (registration) related index in the chemical industry.

[0142]

As shown in FIG. 10 and FIG. 11, ten companies in the electrical equipment industry and ten companies in the

10   chemical industry were selected, the "number of patent registrations (PTRD)", "number of claims registered (PTCL)", "cumulative number of patent registrations (PTSP)", "cumulative patent registration ratio (PTSR)", "number of effective patents (PTEF)", and "effective patent remaining

15   ratio (PTEP)" within a specified period (a certain year) are indicated in a comparable manner.

[0143]

In the calculation example shown in FIG. 10 and FIG. 11, the cumulative number of patent registrations (PTSP) is

20   obtained by calculating the cumulative number of patents subjected to registration by the end of each business year regarding patent applications filed in 1994 onward when patent publications and registrations are available in the Japanese Patent Office's CD-ROM publications. Therefore, there may be

25   cases where this is of a smaller value in comparison to the number of patent registrations (PTRD), which is an index

showing the number of patents of a specified enterprise filed before 1994 and subjected to registration within that year (within a specified period).

[0144]

Incidentally, as described above, when the cumulative number of patent registrations (PTSP) is calculated by counting the patent applications filed in 1994 onward, a predetermined period will be required from the filing of patent applications up to the allowance thereof. Thus, it will be possible to judge that an enterprise having a large value for the number of patent registrations (PTRD) promptly makes examination requests for patent applications and has acquired numerous patent rights, and that the number of years required for registration is small.

[0145]

Cumulative patent registration ratio (PTSR) is a percentage indication obtained through dividing the cumulative number of patents subjected to registration on or before the end of each business year regarding patents filed in 1994 onward by the cumulative number of patent applications (PTSA) filed in 1994 onward.

[0146]

As shown in FIG. 10 and FIG. 11, the calculated values of the respective indexes of "number of patent registrations (PTRD)", "number of claims registered (PTCL)", "cumulative number of patent registrations (PTSP)", and "number of

effective patents (PTEF)" in the electrical equipment industry

are represented as values that are roughly one digit greater

when compared to the respective indexes calculated with

respect to the chemical industry. As a result, it is possible

5   to judge that the electrical equipment industry has a more

severe competition of patents in comparison to the chemical

industry.

[0147]

Particularly as shown in FIG. 10, the indexes of "number

10   of patent registrations (PTRD)" and "number of claims

registered (PTCL)" of Company MS and Company NC in the

electrical equipment industry are significantly larger in

comparison to the other companies. Therefore, it is possible

to presume that these companies devised numerous inventions,

15   are active in research and development, and have a strong

competitive position regarding technology.

[0148]

Meanwhile, in the case of Company PI, although the

indexes of number of patent registrations (PTRD) and

20   cumulative number of patent registrations (PTSP) show a small

value, the indexes of patent application productivity (PPFI)

and patent acquisition productivity (PPPD) described later

show a high value (refer to FIG. 14). Therefore, just because

the number of patent registrations (PTRD) or number of claims

25   registered (PTCL) is small, this does not necessarily mean

that the evaluation of patents owned by that company will be

inferior, and it is necessary to compare and review several indexes according to the purpose of research, size of the enterprise to be researched, or category of business.

[0149]

Further, as shown in FIG. 10 and FIG. 11, most enterprises show a value of 99% or greater as the index value of effective patent remaining ratio (PTEP) in both the electrical equipment industry and chemical industry. From this, it is evident that the once acquired patents are hardly abandoned or extinguished in the same business year.

[0150]

FIG. 12 is a chart denoting the average years required for registration (PTMY) per enterprise in the electrical equipment industry based on the calculation of a four-year period from 1994. Further, FIG. 13 is a chart similarly denoting the average years required for registration (PTMY) per enterprise in the chemical industry.

[0151]

As shown in FIG. 12, in the electrical equipment industry, Company NC is ranked 1st in terms of the shortest average years required for registration (PTMY) in each year. The average years required for registration (PTMY) of Company NC in 2002 is a short period at 4 years or less, and it is possible to assume that examination requests are made simultaneously with the filing, or expedited examination requests are being made. In the case of Company NC, it is

possible to see the enterprise's unique attitude of actively acquiring patents for important inventions filed as patent applications.

[0152]

Meanwhile, in the case of Company SN and Company PI, the numerical value of the average years required for registration (PTMY) is calculated to be roughly 9 years. From this, it is possible to presume that these companies wait for the technology or product to mature, carefully review the invention and its effectiveness, and then request examination for acquiring a patent. As shown in FIG. 12, in the comparison of the value of the average years required for registration (PTMY) between Company NC and Company SN or Company PI, a difference of 5 years can be seen as the average period from the filing of patent applications to the registration thereof. From this, it is possible to predict that the importance of inventions and expectations in inventions differ greatly depending on the enterprise.

[0153]

As shown in FIG. 13, although a significant difference cannot be seen in the chemical industry, the value of the average years required for registration (PTMY) is roughly 6 years for smaller values and roughly 9 years at latest for greater values, and it is possible to judge that most companies are roughly doing what the other companies are doing.

[0154]

By comparing the values of the average years required for registration (PTMY) shown in FIG. 12 and FIG. 13, it is possible to see that a fierce battle in technical development is underway in the electrical equipment industry, but the

5   situation is not as severe in the chemical industry.

[0155]

Further, by calculating and comparing the values of the average years required for registration (PTMY) in the oil/rubber industry, ceramic industry, steel/non-steel/metal

10   product industry, machinery/shipbuilding industry, automobile/transport equipment industry, precision instrument industry and other manufacturing industries, it will be possible to read the characteristics in each industry, or the characteristics of the respective enterprises in such

15   predetermined industry, and this information can be utilized in judging the characteristics of the industry or enterprise value.

[0156]

The definition of the patent productivity index (PP) is

20   explained below.

[0157]

2.   Patent productivity index (PP)

Patent productivity index (PP) is an index for judging the productivity of patented inventions created based on R&D

25   cost.

[0158]

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Results of patent applications and utility model applications may be considered as a part of the injection of R&D cost. Since the use of R&D cost is diversified, it cannot be said that patent applications and utility model

5 applications fully represent the results of the injected R&D cost. Nevertheless, this information can be used as an index for measuring the efficiency of research and development being conducted by the enterprise.

[0159]

10 (2.1) Patent application productivity (PPFI)

Patent application productivity (PPFI) is an index representing the number of claims filed per unit of R&D cost of a specified enterprise. The calculating formula thereof is shown below (Formula 13).

15

Patent application productivity (PPFI)
= (number of claims in patent applications filed by a specified enterprise within a specified period (PACL) / (R&D cost within a specified previous period (RDE)) ...(Formula 13)

20   [0160]

In the present invention, as shown in (Formula 13) above, the official gazette acquisition means acquires from a database the unexamined publications or unexamined publications of patent applications filed by a specified

25 enterprise within a first specified period. And, the number-of-inventions acquisition means acquires the number of patent

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applications or number of inventions such as the number of
claims from the acquired unexamined publications or
publications of registrations, the management-finance
information acquisition means acquires the R&D cost within a
5   second specified period of a specified company from a
management-finance database recording management-finance
information of the enterprise, and the number of inventions
per unit of R&D cost is calculated as the patent application
productivity (PPFI) through dividing the acquired number of
10   inventions by the R&D cost. Incidentally, in the embodiment of
the present invention, although a case is explained regarding
patent applications, the patent application productivity
(PPFI) can similarly be calculated for utility model
applications.

15   [0161]

Further, upon calculating the patent application
productivity (PPFI), in place of performing the calculation
based on patent applications filed by a specified enterprise
within a first specified period, the patent application
20   productivity (PPFI) may be calculated based on patent
applications in a predetermined technical field filed by a
specified enterprise within a first specified period.

[0162]

Further, in the present invention, the patent application
25   productivity (PPFI) is calculated by using applications filed
within the first specified period as the patent publications

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to be counted, and the value within the second specified

period (before the first specified period) as the R&D cost.

[0163]

For instance, the patent application productivity (PPFI)

5   of an enterprise with its business year ending in March is

calculated as follows.

Patent application productivity (PPFI)

= (number of claims filed (PACL) in the year 2000 (Jan. to Dec.

10   2000)) / (R&D cost in the fiscal year 1999 (April 1999 to

March 2000)) ...(Formula 14)

Provided,

·When a patent application is a joint application, a value

15   obtained through dividing the number of claims by the number

of joint applicants may be used as the number of claims filed

(PACL).

·The number of patent applications may be used as the number

of claims filed (PACL).

20   ·As the number of claims filed (PACL), the number of claims

filed in an accounting year may be used in addition to the

number of claims filed for the relevant year.

·As the R&D cost (RDE), "research and development injection

stock" or "total amount of R&D cost" may be used as the

25   retroactive accumulation of the R&D cost for the past several

years.

[0164]

In the foregoing embodiment, the patent application productivity (PPFI) was calculated using the R&D cost (RDE) of the previous year (within a second specified period) of patent applications that were filed by a specified enterprise within a first specified period. This is a result of the present inventors calculating the patent application productivity (PPFI) of the respective enterprises and analyzing such enterprises, where they discovered that the highest coefficient of correlation with changes in the R&D cost (RDE) is the number of claims filed (PACL) in the following year. Nevertheless, depending on the contents of comparison, this may be sought by comparison with the R&D cost (RDE) of the current year, or the ratio in comparison to the previous year.

[0165]

The larger the value of the patent application productivity (PPFI) calculated above, it could be said that the number of claims filed (PACL) or the productivity of the number of inventions is high in research and development. Further, in order to calculate highly reliable patent application productivity (PPFI), in the case of joint applications, the patent application productivity (PPFI) may be calculated by acquiring the number of inventions per unit of applicants and multiplying this with all acquired publications.

[0166]

In such a case, foremost, the official gazette acquisition means acquires from a database unexamined publications or publications of registrations based on patent applications or utility model applications filed by a specified enterprise within a first specified period. Then, number-of-inventions-per-applicant acquisition means acquires the number of patent applications or utility model applications or the number of claims from each of the acquired unexamined publications or publications of registrations, acquires the number of applicants indicated in each of the acquired publications, and acquires the number of inventions per unit of applicants through dividing the number of patent applications or utility model applications or the number of claims by the number of applicants. Further, the number-of-inventions acquisition means acquires the total number of inventions by counting the acquired number of inventions per unit of applicants for all of the acquired publications. Moreover, management-finance information acquisition means acquires R&D cost in a specified enterprise within a second specified period from a management-finance database storing management-finance information of enterprises. Then, the patent application productivity calculation means calculates the number of inventions per unit of R&D cost as the patent application productivity through dividing the acquired number of inventions by the R&D cost.

[0167]

Incidentally, with respect to the number of claims filed (PACL) per R&D cost (RDE), care must be given in that the R&D cost (RDE) required for the research and development and the number of claims filed (PACL) will differ significantly depending on the technical field. Thus, when comparing and analyzing the patent application productivity (PPFI) among companies in the same industry, or when using this for purposes other than analyzing the differences among industries, this may cause a serious misunderstanding.

[0168]

In (Formula 13) above, although the number of claims filed (PACL) was used as the numerator upon calculating the patent application productivity (PPFI), the patent application productivity may also be calculated based on the number of patent applications or number of inventions. Further, although a value of the current year is used as the number of claims filed (PACL) or number of inventions, the patent application productivity may be calculated with a value matching the accounting year.

[0169]

Further, with respect to the R&D cost (RDE) also, ideally, it would be preferable to use a "research and development injection stock" value, which is an accumulation of the research and development going back several years. However, since it was from March 2000 that, as a general rule, the

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"total amount of R&D cost" needed to be entirely recorded as administrative expenses, and disclosed in the explanatory notes in the income statement, in the present embodiment, from the perspective of fairness and reliability of analyzed data,

5   the "total amount of R&D cost" from 1999 onward is used.

[0170]

(2.2) Examination request productivity (PPEX)

Examination request productivity (PPEX) is an index for multiplying the patent application productivity (PPFI) with

10   the estimated examination request ratio (PPAR) and correcting the same. The calculating formula thereof is shown below (Formula 15).

Examination request productivity (PPEX)

15   = (patent application productivity (PPFI)) × (estimated examination request ratio (PPAR)) ...(Formula 15)

[0171]

Examination of a patent application is conducted only after an examination request is made for such patent

20   application, and the patent application will be granted a patent when the Examiner cannot discover a reason for refusing the application. Thus, in many cases, an examination request is not made for applications that lost significance or purpose of acquiring a patent after the filing thereof. Therefore, it

25   can be said that the patent productivity (PPFI) based on the number of patent applications and number of claims filed

(PACL) is not reflecting the research and development efficiency in its true meaning, and the present inventors therefore considered that it is necessary to calculate the productivity by correcting it with an estimated examination

5 request ratio (PPAR).

[0172]

(2.3) Estimated examination request ratio (PPAR)

In the present invention, the estimated examination request ratio (PPAR) is calculated as follows:

10   [0173]

The publication in which an examination request period has passed acquisition means acquires the unexamined publications or publications of registrations based on patent applications or utility model applications filed by a

15 specified enterprise within a third specified period so that the examination request period pass before tabulation. Next, the estimated examination request ratio acquisition means acquires the number of patent applications and the number of examination requests made in the applications from the

20 unexamined publications or publications of registrations based on patent applications or utility model applications filed within the third specified period, and calculates the estimated examination request ratio (PPAR) through dividing the acquired number of examination requests by the acquired

25 number of patent applications.

[0174]

In this embodiment of the present invention, upon calculating the estimated examination request ratio (PPAR), the number of examination requests is counted per year using the unexamined publications of patent applications filed by the enterprise to be researched within a total of 3 years (corresponds to the third specified period) of 1994, 1995 and 1996 that are more than 7 years (the examination request period) before the time of tabulation (2003), and the examination request ratio of the 7th year is calculated to be the estimated examination request ratio (PPAR) of such enterprise.

[0175]

The reason the number of patent applications of 3 years (within a third specified period) after 1994 was used is to reduce the error arising depending on the year, and the third specified period is not limited to 3 years as described above. Further, the examination request ratio for only the current year may be used, or the examination request ratio for only a certain year may also be used.

[0176]

Incidentally, upon calculating the estimated examination request ratio (PPAR), the reason the cumulative examination request ratio of the 7th year was used is based on the system that requires the applicant to request examination within 7 years (within 3 years from October 1, 2001) from the filing of patent applications.

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[0177]

(2.4) Patent acquisition productivity (patent granted

productivity; PPPD)

Patent acquisition productivity (PPPD) is an index for

5   correcting the patent application productivity (PPFI) with the

estimated registration ratio (PPPR). The calculating formula

thereof is shown below (Formula 16).

Patent acquisition productivity (PPPD)

10   = (patent application productivity (PPFI)) × (estimated

registration ratio (PPPR)) …(Formula 16)

[0178]

Estimated registration ratio (PPPR) is an estimated ratio

of the number of patents to be ultimately acquired. The patent

15   acquisition productivity (PPPD) is calculated by correcting

the patent application productivity (PPFI) with this estimated

registration ratio (PPPR). Upon calculating the estimated

registration ratio (PPPR), it would be preferable to use a

performance value of past patent applications of the

20   respective enterprises being registered as patents. The patent

acquisition productivity (PPPD) calculated like this is

considered to show the relationship of research and

development and patent applications in the proper sense. When

calculating the patent acquisition productivity (PPPD) of the

25   respective enterprises, even if an enterprise is filing the

same number of patent applications each year, the values of

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the calculated patent acquisition productivity (PPPD) may differ considerably. The estimated registration ratio (PPPR) is calculated as follows.

[0179]

5   (2.5) Estimated registration ratio (PPPR)

The estimated registration ratio (PPPR) is calculated by seeking the cumulative registration ratio (%) of performance from all patent applications regarding how the subsequent number of patent registrations visually increases in

10 comparison to the number of patent applications, converting this cumulative registration ratio (%) into a natural logarithm and plotting it on a Y axis, and plotting the years elapsed on an X axis. The regression line of this distribution is sought, the value of the average years required for

15 registration of the enterprise is sought in the X axis, the value of the Y axis on the corresponding regression line is read, and the value of this Y axis is returned from a natural logarithm to a normal natural number to obtain the estimated registration ratio. Further, without using a natural logarithm,

20 an estimated value may be calculated with a standard arithmetic average.

[0180]

Specifically, in order to calculate the estimated registration ratio (PPPR), foremost, the official gazette

25 acquisition means (fifth official gazette acquisition means) acquires from a database unexamined publications or

publications of registrations based on patent applications

filed by a specified enterprise within a fifth specified

period, and the publications of patent registrations subjected

to registration by a predetermined time among the patent

5   applications. Then, the cumulative number of patent

applications acquisition means acquires, for each

predetermined period, the cumulative number of patent

applications filed by a specified enterprise within a

specified period based on the acquired unexamined publications

10   or publication of registrations.

[0181]

Next, the cumulative number of patent registrations

acquisition means acquires, for each predetermined time, the

cumulative number of patent registrations of patents subjected

15   to registration by each predetermined time based on the

acquired publications of registrations. Then, the cumulative

patent registration ratio calculation means calculates, for

each predetermined time, the cumulative patent registration

ratio through dividing the acquired cumulative number of

20   patent registrations by the cumulative number of patent

applications. Further, the estimated registration ratio

calculation means calculates, for each predetermined time, the

natural logarithm of the cumulative patent registration ratio

and calculating the regression line or regression curve

25   thereof, and calculates the future estimated registration

ratio by substituting the calculated average period required

for registration for the calculated regression line or regression curve.

[0182]

A display example of the patent productivity index (PP) is explained below.

[0183]

FIG. 14 is a chart denoting the calculation of three indexes of patent application productivity (PPFI), examination request productivity (PPEX), and patent acquisition productivity (PPPD) in a specified period (specified year) of ten companies in the electrical equipment industry. Further, FIG. 15 is a chart similarly denoting the calculation of three indexes relating to the patent productivity of ten companies in the chemical industry.

[0184]

In the example shown in FIG. 14, upon calculating the patent application productivity (PPFI), the number of claims filed (PACL) per JPY1,000,000,000 of unit of R&D cost (RDE) was calculated. Incidentally, the number of inventions per unit of R&D cost is not limited to the number of claims filed (PACL), and the number of patent applications, number of claims of utility model applications, or number of utility model applications may be used as the number of inventions. Further, the number of inventors may be used in place of the unit of R&D cost.

[0185]

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As shown in FIG. 14, Company MS in the electrical equipment industry has a value of 761.1 as its patent application productivity (PPFI), which means that 761 claims or more are being filed per JPY1,000,000,000 of R&D cost.

[0186]

Further, since the value of examination request productivity (PPEX) is calculated to be 442.9, it can be estimated that roughly 442.9 claims among the foregoing 761.1 claims have requested examination. And, among the 442.9 claims that requested examination, it can be estimated that 152 claims have been actually registered from the calculated value of the patent acquisition productivity (PPPD).

[0187]

FIG. 16 is a diagram showing the relationship of the patent application productivity (PPFI) and patent acquisition productivity (PPPD) in the electrical equipment industry.

In FIG. 16, the positions of the respective companies are plotted with the horizontal axis (x axis) as the patent application productivity (PPFI), and the vertical axis (y axis) as the patent acquisition productivity (PPPD). Incidentally, in FIG. 16, MS, PI and other abbreviations are provided in order to identify the plotted companies.

[0188]

The straight line shown in FIG. 16 is the regression line showing the average value of the positions of the plotted companies, and the linear expression of this regression line

is shown above FIG. 16.

[0189]

As shown in FIG. 16, enterprises with a generally high patent application productivity (PPFI) value also has a large number of patent registrations (PTRD) value, and, as a result, the patent acquisition productivity (PPPD) also tends to be high.

[0190]

Company MS and Company PI shown in FIG. 16 have high values for both patent application productivity (PPFI) and patent acquisition productivity (PPPD). Meanwhile, Company FJ has a low patent application productivity (PPFI) value, and also has a low patent acquisition productivity (PPPD) value.

[0191]

Further, as shown in FIG. 16, in the electrical equipment industry, the companies are separated into two groups; namely, Company MS and Company PI having extremely large value for patent application productivity (PPFI) and patent acquisition productivity (PPPD), and the remaining companies.

[0192]

Although Company MS is investing a decent amount in R&D cost (RDE), since the company is also filing numerous patent applications as can be assumed from FIG. 10, the patent application productivity (PPFI) value is high.

[0193]

Meanwhile, with Company PI, as shown in FIG. 10, the

patent application productivity (PPFI) is high even though the R&D cost (PPFI) are small and not many patent applications are filed. Further, both of these companies are showing high patent acquisition productivity (PPPD). Thus, it can be judged that these companies are spending efficient R&D cost regarding patent applications, and are companies with superior methods of research and development.

[0194]

Further, Company NC and Company SH are showing extremely high patent acquisition productivity (PPPD) values in comparison to other companies showing similar patent application productivity (PPFI) values. This is based on the presumption that the patent registration ratio per R&D cost will increase since the patent applications of both companies have been granted patents with an extremely high percentage from the past. Therefore, it is possible to assume that this technology will be of a highly monopolistic state in the future.

[0195]

Meanwhile, Company FJ has low patent application productivity (PPFI), and low patent acquisition productivity (PPPD). From this, it is possible to judge that this is a company facing problems such as being unable to obtain novel technology from its injection of R&D cost (RDE).

[0196]

FIG. 17 is a diagram showing the relationship of the

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patent application productivity (PPFI) and patent acquisition productivity (PPPD) in the chemical industry.

As shown in FIG. 17, Company DN has extremely high patent application productivity (PPFI) and also has high patent acquisition productivity (PPPD) in the chemical industry. Therefore, it is possible to deduce that Company DN has an extremely high patent application productivity (PPFI) in comparison to other companies, has high patent acquisition productivity (PPPD), is creating inventions by efficiently investing in R&D cost (RDE), and further has a high patent registration percentage. Therefore, it is possible to judge that Company DN is a company that can be highly evaluated regarding patent strategy.

[0197]

Further, from FIG. 17, it is also possible to judge that companies other than Company DN in the chemical industry are basically in a single group. Among such companies, Company SK is showing extremely high patent acquisition productivity (PPPD) in comparison to other companies with the same level of patent application productivity (PPFI). This means that patent applications filed by Company SK are being registered as patents at an extremely high percentage from the past.

[0198]

Meanwhile, Company AK has low patent application productivity (PPFI), and low patent acquisition productivity (PPPD). From this, it can be said that this company has

problems in the effective use of R&D cost.

[0199]

FIG. 18 is a diagram showing the relationship of the
patent application productivity (PPFI) and examination request
productivity (PPEX) in the chemical industry.

In FIG. 18, the positions of the respective companies are
plotted with the horizontal axis (x axis) as the patent
application productivity (PPFI), and the vertical axis (y
axis) as the examination request productivity (PPEX).
Incidentally, in FIG. 18, abbreviations are provided in order
to identify the plotted companies.

[0200]

As shown in FIG. 18, in the chemical industry, most
companies are positioned near the regression line. Further, as
with FIG. 17, Company DN alone is positioned at a location
with high values for both indexes, and the other companies are
biased toward the lower left.

[0201]

Further, according to FIG. 18, Company DN has high patent
application productivity (PPFI) and high examination request
productivity (PPEX). From this, it is possible to deduce that
Company DN is efficiently filing patent applications in
relation to its injection of R&D cost, the examination request
ratio is high, and the filed inventions are not put to waste.

[0202]

Meanwhile, Company AK and Company KO have low patent

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application productivity (PPFI) values, and low examination request productivity (PPEX) values. Thus, it can be judged that these companies are not sufficiently creating inventions in view of the invested amount, and, since the examination

5   request ratio is low, the invested amount in research and development is not being used effectively.

[0203]

FIG. 19 is a diagram showing the relationship of the patent application productivity (PPFI) and examination request

10   productivity (PPEX) in the electrical equipment industry.

As shown in FIG. 19, in the electrical equipment industry, Company MS and Company PI have high patent application productivity (PPFI) values and high examination request productivity (PPEX) values. The other companies are positioned

15   at the lower left of the regression line.

[0204]

According to FIG. 19, it is possible to deduce that both Company MS and Company PI are creating inventions and filing applications efficiently in relation to the invested amount in

20   the R&D cost, have a high examination request ratio, and do not waste the filed inventions.

[0205]

Meanwhile, Company FJ has low patent application productivity (PPFI), and low examination request productivity

25   (PPEX). Thus, it can be judged that this company is not sufficiently creating inventions in view of the invested

amount, and, since the examination request ratio is low, the invested amount in research and development is not being used effectively.

[0206]

5   FIG. 20 is a diagram showing the relationship of the patent acquisition productivity (PPPD) and examination request productivity (PPEX) in the chemical industry.

In FIG. 20, the positions of the respective companies are plotted with the horizontal axis (x axis) as the examination
10   request productivity (PPEX), and the vertical axis (y axis) as the patent acquisition productivity (PPPD). Incidentally, in FIG. 20, abbreviations are provided in order to identify the plotted companies.

[0207]

15   As shown in FIG. 20, in the chemical industry, Company DN has exponential values as the examination request productivity (PPEX) and patent acquisition productivity (PPPD). The other companies are located at the lower left.

[0208]

20   According to FIG. 20, since Company DN has a high examination request productivity (PPEX) value and a high patent acquisition productivity (PPPD) value, it is evident that the filed inventions are requested for examination at a high ratio and granted patents at a high ratio. Like this,
25   since this company is obtaining rights for its inventions and taking care of its patents, it is possible to judge this

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company can be evaluated highly from the perspective of patents.

[0209]

In the case of Company SK, although the examination request productivity (PPEX) value is not too high, the patent acquisition productivity (PPPD) is showing a high numerical value. This denotes that Company SK is carefully selecting its inventions filed as patent applications upon requesting examination, and the inventions requested for examination are being patented at a high percentage.

[0210]

In the case of Company AK, the examination request productivity (PPEX) value is low, and the patent acquisition productivity (PPPD) value is also low. Thus, the number of examination requests is low, and the ratio of patents granted is also low. Therefore, it is evident that this company has numerous patent applications that have gone to waste.

[0211]

FIG. 21 is a diagram showing the relationship of the patent acquisition productivity (PPPD) and examination request productivity (PPEX) in the electrical equipment industry.

As shown in FIG. 21, in the electrical equipment industry, Company PI and Company MS show high examination request productivity (PPEX) values and high patent acquisition productivity (PPPD) values. The other companies are located at the lower left far apart from these two companies.

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[0212]

According to FIG. 21, Company PI and Company MS have a high ratio of requesting examination for their patent applications, and it is possible to judge that these companies have a statistically high percentage of being granted patents.

[0213]

Contrarily, in the case of Company FJ, the examination request productivity (PPEX) value is low, and patent acquisition productivity (PPPD) value is also low. Therefore, it is possible to judge that this company has some kind of strategic problem regarding patent applications.

[0214]

As described above, as a result of representing the respective patent productivity indexes in a graph, it will be possible to grasp the characteristics of the patent productivity in the respective enterprises at a glance, and this will be useful in evaluating enterprises.

[0215]

In addition to the foregoing two industries, by calculating the indexes and viewing the distribution of the respective enterprises regarding the patent productivity in the oil/rubber industry, ceramic industry, steel/non-steel/metal product industry, machinery/shipbuilding industry, automobile/transport equipment industry, precision instrument industry and other manufacturing industries, it will be easy to read the characteristics in each industry, or the

characteristics of the respective enterprises in such
predetermined industry, and this information can be utilized
in judging the characteristics of the industry or enterprise
value.

[0216]

FIG. 22 is a chart showing the results of calculating the
logarithm with the cumulative patent registration ratio (PTSR)
as the antilogarithm upon calculating the estimated
registration ratio.

In the example shown in FIG. 22, the cumulative patent
registration ratio (PTSR) is calculated for each year based on
the ratio of the number of patent applications (cumulative
number of patent applications (PTSA)) filed by an enterprise
to be researched within a specified period (for instance, 1994,
1995 and 1996), and the cumulative number of patent
registrations (PTSP) patented by a predetermined time (each
year) among the patent applications filed during the same
period, and the natural logarithm thereof is calculated for
each year.

[0217]

In FIG. 22, an example is shown where a certain company
filed 3,500 patent applications in 1994, 3,000 in 1995 and
3,500 in 1996. With respect to the applications of each year,
the number of registrations subjected to registration from the
following year is accumulated. for each elapsed year.

[0218]

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The numbers in the column of elapsed years (years) show the years elapsed from the filing. For instance, in the 0 year of applications filed in 1994 (cumulative), there were 0 registrations among the 3,500 applications, there was 1

5   registration in the first year, there were 16 registrations in total for the second year, and there were 666 registrations for the ninth year.

[0219]

Further, in 0 year of applications filed in 1996

10   (cumulative), there were also 0 registrations among the 3,500 applications, 0 registrations for the first year, 22 registrations for the second year, and 378 registrations in total for the seventh year. In the case of the column of applications filed in 1996, since the filing is two years

15   later than the applications filed in 1994, there are two less rows to be entered in the column.

[0220]

The row of cumulative number of registrations (PTSP) (cumulative) shows the total number of registrations for three

20   years (within fifth specified period) of patent applications subjected to registration per elapsed year among the patent applications filed between 1994 and 1996. Therefore, the cumulative number of patent registrations (PTSP) of 0 year (each specified period) had 0 registrations, first year had 1

25   registration, second year had a total of 46 registrations, and the seventh year had a total of 1,182 registrations among the

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total of 10,000 cumulative number of patent applications (PTSA) filed between 1994 and 1996.

[0221]

The cumulative registration ratio (PTSR) is a percentage obtained through dividing the cumulative number of registrations (PTSP) (cumulative) by the 10,000 patent applications. Therefore, in the column of cumulative registration ratio (%) (PTSR), 0 year had 0 registrations among the 10,000 applications at 0.00%, first year had 1 registration at 0.01%, second year had 46 registrations at 0.46%, and seventh year had 1,182 registrations at 11.82%.

[0222]

In the column of cumulative registration ratio (ln(PTSR)), since the natural logarithms are calculated in the following order, first year onward are calculated at -4.61, -0.78, 0.46, 1.17, 1.88, 2.16 and 2.47, respectively.

[0223]

FIG. 23 is a diagram plotting the natural logarithm of the cumulative patent registration ratio (PTSR) for each year elapsed and representing the regression curve thereof.

In FIG. 23, the regression curve is calculated by taking the elapsed years as the explanatory variable in the horizontal axis (x axis), and taking the natural logarithm of the cumulative patent registration ratio (PTSR) calculated each year in the vertical axis (y axis), and based on the respective points thereof.

[0224]

In the present invention, the estimated registration ratio is calculated as the future registration ratio by substituting the average years required for registration (PTMY) (index showing the performance value of the average number of years required from filing to registration regarding patents filed by a specified enterprise subjected to registration within a specified period).

[0225]

The regression curve shown in FIG. 23 is calculated, at a logarithm approximate curve, as $(y = 3.5303\ln(x) - 3.9053)$.

[0226]

When assuming that the average years required for registration (PTMY) of this enterprise is 7.3 years, $x = 7.3$ is substituted in the foregoing formula, and $y = 3.112$ is sought thereby. When this is set as the value of natural logarithm, antilogarithm will be calculated at $\ln(3.112) = 22.5$. Therefore, the estimated registration ratio (PPPR) of this enterprise is assumed to be 22.5%.

[0227]

FIG. 24 is a diagram plotting the natural logarithm of the cumulative patent registration ratio (PTSR) for each year elapsed and representing the regression line thereof.

Although the logarithm approximate curve regarding the dispersed points that were plotted was calculated in FIG. 23, the regression curve such as the logarithm approximate curve

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of the present invention is not limited thereto, and, as shown

in FIG. 24, the estimated registration ratio (PPPR) may be

calculated by calculating the regression line of the

respective dispersed points.

5   [0228]

As shown in FIG. 24, when the regression line of the

respective dispersed points is calculated, the regression line

formula will be (y = 1.0187x-3.6807). As with the case of FIG.

23, if the average years required for registration (PTMY) of

10   this enterprise is 7.3 years, x = 7.3 is substituted in the

regression line formula, and y = 3.76 is sought thereby. When

this value is used as the natural logarithm to calculate the

antilogarithm, ln(3.76) = 42.8. In other words, the estimated

registration ratio (PPPR) of this enterprise is estimated to

15   be 42.8%.

[0229]

Incidentally, when calculating the estimated registration

ratio (PPPR) of an enterprise, whether to use the foregoing

regression line or whether to use the logarithm approximate

20   curve, the differences in the calculated results of the two

may be compared with the recent performance of the enterprise,

and the curve to be used may be decided thereby. In the

example shown in FIG. 23 and FIG. 24 above, the estimated

registration ratio (PPPR) calculated using the logarithm

25   approximate curve was closer to the actual circumstances.

[0230]

120

As described above, although whether to use the approximate line or approximate curve was decided according to the accumulated results, when it is not possible to decide on the value of the estimated registration ratio (PPPR) or when an abnormal value is calculated, the performance results of such enterprise in recent years or the performance results of several years of such enterprise may be used.

[0231]

Further, in the present embodiment, although the estimated value was calculated using a natural logarithm of the cumulative patent registration ratio (PTSR) in order to make the graphs of FIG. 23 and FIG. 24 easy to view, the present invention is not limited to using the natural logarithm, and other curves such as an index function may be used to calculate the estimated value.

[0232]

FIG. 25 shows a flowchart of calculating and outputting the respective indexes of average period required for registration, average period before examination request, patent application productivity, examination request productivity or patent acquisition productivity.

[0233]

At S501 "select enterprise for enterprise value evaluation", the information processing means 380 receives the input of a display command of a screen for selecting an enterprise from a user via the input means 370 such as a

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keyboard and the bus 399. The information processing means 380

reads the display data upon selecting the enterprise from the

recording means 384 based on such command, converts this into

a display image signal, and outputs such signal to the display

5   interface 373. The display interface 373 that acquired the

display data from the information processing means 380

converts and outputs the display data corresponding to the

display means 372. The display means 372 displays a screen

based on the display data input from the display interface 373

10   and notifies the user.

[0234]

The user, while viewing the company selection screen

displayed on the display means 372, inputs the information for

specifying one or more enterprises to be researched via the

15   input means 370. Here, the information to be input may be the

enterprise name, enterprise code, or an enterprise may be

selected from the enterprise selection screen. Information for

specifying the enterprise input by the user via the input

means 370 is read by the information processing means 380 via

20   the bus 399.

[0235]

When the information processing means 380 receives the

input of appropriate enterprise specifying information, the

information processing means 380 reads the display data of the

25   display menu for selecting the type of index to evaluate the

enterprise value from the recording means 384, converts this

into a display image signal, outputs such signal to the

display interface 373, and, for example, displays the

enterprise value evaluation menu shown in FIG. 26 on the

display means 372.

5   [0236]

Next, at S502 "select menu for enterprise value

evaluation", the user, while viewing the enterprise value

evaluation menu displayed on the display means 372, selects

the desired index for evaluating the enterprise value and

10   inputs such index.

[0237]

When selecting an index from the enterprise value

evaluation menu shown in FIG. 26 upon judging the enterprise

value, the user selects a desired index from the selection

15   menu of "business, profit, market value" or "R&D, patent", or

"patent portfolio". In the example shown in FIG. 26, the user

is selecting the item of "(PT) patent acquisition

(registration) related index" belonging to the field of "R&D,

patent".

20   [0238]

When the user inputs information for selecting the index

of "R&D, patent", such input information is conveyed to the

information processing means 380, the command for displaying a

selection mark at the portion of the index selected by the

25   user is output to the display interface 373, and information

for displaying the respective indexes existing at a lower

level in the form of a pulldown menu is output to the display interface 373. Incidentally, in the example shown in FIG. 26, the mark of the selected item is changed from a white square to a black square.

5   [0239]

FIG. 27 shows a display example displaying the respective indexes existing in a lower level of "R&D, patent" in the form a pulldown menu.

The user a desired index to be calculated from the

10   respective indexes displayed on the display means 372. With the example illustrated in FIG. 27, the user is selecting the index of "number of patent registrations (PTRD)" representing the number of patents of a specified enterprise subjected to the registration within a specified period.

15   [0240]

Further, when the user wishes to calculate the "(PS) patent stock related index" falling under the field of "R&D, patent", as shown in FIG. 28, the user will select "(PS) patent stock related index" from the pulldown menu.

20   [0241]

When the user inputs information for selecting the "(PS) patent stock related index", the information processing means 380 that acquired such input information outputs a command for displaying a selection mark at the portion of the index

25   selected by the user to the display interface 373, and, outputs information for displaying the respective indexes

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belonging to a lower level of the "(PS) patent stock related index" as shown in FIG. 29 to the display interface 373 in the form of a pulldown menu.

[0242]

5   The user inputs information for selecting the index of "patent stock index" from the pulldown menu displayed as shown in FIG. 29. Then, this input information is conveyed to the information processing means 380. The information processing means 380 sets a flag for deciding the parameter of the index

10   to be calculated, displays a selection mark at the portion of the index selected by the user, and notifies the user of the set information.

[0243]

When the user wishes to conduct a research upon mutually

15   associating the indexes of inventions and the business, profit or market value information of a predetermined enterprise, the user selects "(C) profit related index" from the selection menu of "business, profit, market value". Then, the information processing means 380 outputs a command for

20   displaying on the display means 372 the pulldown menu indicating the items relating to the "(C) profit related index" shown in FIG. 31. The user selects a desired profit index from the pulldown menu displayed on the display means 372. In the example shown in FIG. 31, a case where the "sales

25   volume" is selected is shown.

[0244]

125

When the user inputs information for selecting the item of "sales volume" related to "(C) profit related index", such input information is conveyed to the information processing means 380. The information processing means 380 sets a flag for deciding the operation formula for calculating the index, displays a selection mark at the portion of the index selected by the user, and notifies the user of the set information.

[0245]

When the user selects the "set" button and the selection processing of the type of index for evaluating the enterprise value is ended, the information processing means 380 reads the display data of the display screen for setting the input conditions upon evaluating the enterprise value from the recording means 384, converts this into a display image signal, and outputs such signal to the display interface 373, and, for example, displays on the display means 372 the enterprise value evaluation input condition setting screen shown in FIG. 32.

[0246]

The user, while viewing the enterprise value evaluation input condition setting screen displayed on the display means 372, selects and inputs the desired conditions for evaluating the enterprise value.

[0247]

For example, the user, based on the display of the enterprise value evaluation input condition setting screen

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shown in FIG. 32, selects the conditions of "target document" and "reading of data" upon calculating the index for judging the enterprise value. In the example shown in FIG. 32, the user is selecting "unexamined patent applications" and

5   "registered patents" as the conditions of the "target document". Moreover, in the example show in FIG. 32, the user is selecting "Internal DB1" as the condition of "reading of data".

[0248]

10   When the user inputs the various conditions of "target document" and "reading of data", such input information is conveyed to the information processing means 380. The information processing means 380 sets a flag of the items input by the user regarding the conditions of the "target

15   document" and "reading of data", displays a selection mark at the portion of the index selected by the user, and notifies the user of the set information.

[0249]

When the user selects the "set" button and the input

20   regarding the conditions of the "target document" and "reading of data" is completed, the information processing means 380 subsequently reads the display data of the enterprise value evaluation input condition setting screen shown in FIG. 33 from the recording means 384, and outputs a command for

25   displaying this on the display means 372 via the display interface 373. The user, while viewing the enterprise value

evaluation input condition setting screen displayed on the

display means 372, selects a desired enterprise to be

evaluated. In the example shown in FIG. 33, the user is

selecting "electrical equipment industry" among the

5   "industries" to become the large classification among the

target of enterprise evaluation. Further, the user may also

select "enterprise" as the detailed classification of

individual enterprises among the target of enterprise value

evaluation, and designate input conditions such as the

10   "enterprise name", "enterprise code", "applicant code" and so

on. When the user, while viewing this screen, selects the

"target" on the right side and further selects the enterprise,

such user will input the enterprise name or enterprise code

and applicant code.

15   [0250]

When the user selects the "set" button and ends the input

condition setting of the enterprise value evaluation, such

input information is conveyed to the information processing

means 380. The information processing means 380 sets a flag of

20   the enterprise to become the "target" input by the user,

displays a selection mark at the portion of the index selected

by the user, displays information such as the set enterprise

name, enterprise code and application code on the display

means 372, and notifies the user of the set information.

25   [0251]

When the user selects the "set" button and the setting of

the input conditions of the enterprise value evaluation is

ended, the information processing means 380 subsequently reads

the display data of the enterprise value evaluation output

condition setting screen shown in FIG. 34 from the recording

5   means 384, and outputs a command for displaying this on the

display means 372 via the display interface 373. The user,

while viewing the enterprise value evaluation output condition

setting screen displayed on the display means 372, selects a

desired display mode. In the example shown in FIG. 34, "single

10   map" is selected as the information relating to the "map

position", the "patent application productivity" is selected

as the "output data", and "upper 20" is selected as the volume

of information to be output and displayed.

[0252]

15   When the user wishes to conduct a research upon mutually

associating "business, profit, market value" and "R&D, patent",

the user selects "(A) investment index" from the selection

menu of "business, profit, market value" shown in FIG. 35.

Then, the information processing means 380 outputs a command

20   for displaying on the display means 372 the pulldown menu

indicating the items relating to the "(A) investment index"

shown in FIG. 36. The user selects a desired profit related

index from the pulldown menu displayed on the display means

372. In the example shown in FIG. 36, a case where the

25   "investment trend index" is selected is shown.

[0253]

When the user inputs information for selecting the item

of "investment trend index" related to "(A) investment index",

such input information is conveyed to the information

processing means 380. The information processing means 380

5   sets a flag for deciding the operation formula for calculating

the index, displays a selection mark at the portion of the

index selected by the user, and notifies the user of the set

information.

[0254]

10   Next, the user, while viewing the screen shown in FIG. 37,

selects the item of "(PA) patent application related index"

from the selection menu of "R&D, patent". Then, the pulldown

menu shown in FIG. 38 is displayed on the display means 372.

In the example shown in FIG. 38, "number of claims filed" from

15   the selection menu of "(PA) patent application related index".

[0255]

When the user selects the "set" button and the setting of

the enterprise value evaluation output conditions is ended,

processing to the performed by the information processing

20   means 380 proceeds to the processing of S503 "select

combination" shown in Fig. 25.

[0256]

When the user designates the implementation of operation

relating to management-finance information such as "business,

25   profit, market value", the processing to be performed by the

information processing means 380 proceeds to the processing of

S604 "acquisition of management-finance information", and, when the user designates the implementation of operation of "R&D patent" or "patent portfolio", the processing to be performed by the information processing means 380 proceeds to

5   the processing of S504 "acquire patent information".

[0257]

Incidentally, when the user only designates an independent operation of the "number of patent registrations" or the like, the information processing means 380 does not

10   select the combination processing and implements only the processing of S504 onward.

[0258]

For example, when the user designates the operation of the "number of patent registrations" from the selection menu

15   of "R&D, patent", at S504, the information processing means 380 acquires the patent publications of the respective enterprises and information relating thereto from the database 20 based on the operation processing of the patent portfolio and information relating to the designated enterprise, and

20   performs processing for extracting the IPC sub-classes, number of patent applications, number of claims in a patent application and other information required for the operation. After the acquisition processing of patent information is ended, the processing to be performed by the information

25   processing means 380 proceeds to the processing of subsequent S505 "calculate patent information".

[0259]

At S505, the information processing means 380 performs processing for calculating the desired index of the user based on the patent information acquired at S504, the operation formula related to "R&D, patent" input by the user, and the calculating formula to which a flag has been set based on the enterprise name or the like.

[0260]

When the operation processing of the index relation to patents is ended at S505, the processing to be subsequently performed by the information processing means 380 proceeds to the processing of S506 "organize calculation result of patent information".

[0261]

At S506, the information processing means 380 classifies the specified enterprise into a predetermined category based on the operation result of the index relating to patents, and further performs operation processing for predetermined ranking or discrimination, and then organizes the various operation results.

[0262]

When the organization of the various operation results is ended at S506, the processing to be performed by the information processing means 380 proceeds to the subsequent processing of S507 "create graph".

[0263]

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Meanwhile, in a case where the user selects "(A) investment index" from the "business, profit, market value" (refer to FIG. 36), and further selects "investment trend index", and desires the combination of the operation of "R&D, patent" and other items such as the "business, profit, market value", the processing to be performed by the information processing means 380 proceeds to S604 "acquire management-finance information".

[0264]

At S604, the information processing means 380 acquires various types of information from the database 20 such as the information showing the size of the enterprise, finance information of the enterprise, and combined information of the enterprise, and operates the management-finance information at the subsequent S605 "calculate management-finance information".

[0265]

When the operation processing of management-finance information is ended at S605, the processing to the subsequently performed by the information processing means 380 will proceed to S606 "organize calculation result of management-finance information" in order to perform the operation processing of management-finance information, and then the routine proceeds to the subsequent S507.

[0266]

At S507, the information processing means 380 creates a chart or graph by applying the operation result of the patent

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information calculated at S505, various operation results

organized at S506, operation result of the management-finance

information operated at S605, or operation result of the

various types of management-finance information organized at

5   S606 into a display format according to the index or the

operation result thereof, and coverts this into display data.

[0267]

Next, at S508 "output graph", the information processing

means 380 outputs the display data of the chart or graph

10   created at S507 to the display interface 373, and displays

this on the display means 372.

[0268]

By the user perusing the chart or graph display at S508,

the user will be able to easily and accurately judge, with a

15   unique index, the enterprise value based on the

diversification of inventions in the respective enterprises,

competitive position relating to inventions, validity of the

enterprise value, or the relationship between such unique

information concerning inventions and the management-finance

20   information.

[0269]

Depending on the items of enterprise evaluation

designated by the user, there may be cases where the

information processing means 380 performs a more detailed

25   ranking in order to judge the enterprise value. In such a case,

the information processing means 380 will read the

predetermined threshold or the like at S509 "determine
enterprise value" to judge the enterprise value. thereafter
output the numerical value or graph thereof, and then end the
calculation processing of the various indexes.

5

Industrial Applicability

[0270]

According to the present invention,

official gazette acquisition means acquire, from a

10   database, publications of patent registrations subjected to
registration from among the patent applications filed by a
specified enterprise within a specified period;

average period required for registration calculation
means calculate a required registration period for individual

15   applications by subtracting the filing date from the
registration date indicated in the acquired publications of
registrations, calculate an accumulated required registration
period by counting the calculated required registration period
for all patents subjected to the registration, and calculate

20   an average period required for registration through dividing
the accumulated required registration period by the total
number of patents subjected to the registration and average
number of days of one year or one month.

Therefore, the average years required for registration

25   can be calculated and displayed upon classification per
technical area such as based on enterprises, based on

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workplaces, based on inventors, based on IPC and the like, and the user will be able to know which technical field the enterprise to be researched is laying emphasis, or which technical field the enterprise to be researched is defensively
5 positioning the inventions.

Further, a user will be able to judge that a business department having a short average period required for registration is a department that is advancing development with strategic emphasis, and, contrarily, a user will be able
10 to judge that a technical field having a long average period required for registration is a relatively defensive department. Like this, by perusing the average period required for registration, a user will be able to judge the attitude of an enterprise to patents.

15 Further, according to the present invention, since the average period required for registration calculation means calculates the average period required for registration through dividing the accumulated required registration period by the total number of patents subjected to registration and
20 average number of days of one year or one month, the results can be displayed to the user in a easy-to-view manner, and the user will be able to instantaneously understand the average period required for registration in units of years or months. For instance, if the average period required for registration
25 per patent application is 365.25 days, this can be notified as 1 year or 12 months.

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Moreover, according to the present invention, since the average period required for registration is calculated based on patent applications per predetermined technical field in a specified enterprise, it will be possible to compare the

5   average period required for registration with competitors per technical field, and use this as information for deciding on whether one's company should enter into a new technical field.

[0271]

Further, the present invention comprises:

10   official gazette acquisition means for acquiring, from a database, unexamined publications requested for examination and publications of patent registrations subjected to registration from among patent applications filed by a specified enterprise within a specified period;

15   average period before examination request calculation means for calculating a period before examination request for individual applications by subtracting a filing date from a date of examination request described in the acquired unexamined publications or publications of registrations,

20   calculating an accumulated period before examination request by counting the calculated period before examination request for all patents requested for examination, and calculating the average period before examination request through dividing the accumulated period before examination request by the total

25   number of patents requested for examination; and

output means for outputting the calculated average period

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before examination request to display means, printing means, recording medium, or another telecommunications device via a communication line.

Therefore, it will be possible to judge that patent
5   applications of a certain business department to request for examination at an early stage belong to a strategically important technical field, and it will be possible to judge that technical fields with a long average period before examination request belong to a relatively defensive
10   department. Therefore, based on the calculated average period before examination request, the user will be able to know which technical field the enterprise to be researched is laying emphasis, or which technical field the enterprise to be researched is defensively positioning the inventions, and the
15   user will be able to judge the attitude of an enterprise to patents.

Moreover, according to the present invention, since the average period before examination request calculation means calculates the average period before examination request
20   through dividing the accumulated period before examination request by the total number of examination requests and the average number of days of one year or one month, the results can be displayed to the user in a easy-to-view manner, and the user will be able to instantaneously understand the average
25   period before examination request in units of years or months.

Moreover, according to the present invention, since the

average period before examination request is calculated based

on patent applications per predetermined technical field in a

specified enterprise, it will be possible to total the average

years before examination request according to workplaces of

5   enterprises, inventors, IPC and the like. Also it is possible

to compare the average period before examination request with

competitors per technical field, and use this as information

for deciding on whether one's company should enter into a new

technical field, enabling to learn, for example, that a sector

10   for which the average period before examination request is

short is a sector strategically important.

Further, the present invention uses, as the publications

of registrations, publications of patent registrations,

publications of examined patent applications, publications of

15   examined utility model applications or publications of utility

model registrations, and uses, as the unexamined publications,

publications of unexamined patent applications, published

Japanese translations of PCT international applications for

patents, publications of unexamined utility model applications

20   or published Japanese translations of PCT international

applications for utility models. Therefore, enterprise

evaluation can be conducted more accurately based on broader

technical documents.

[0272]

25   Moreover, the present invention comprises:

official gazette acquisition means for acquiring, from a

database, unexamined publications or publications of registrations based on patent applications or utility model applications filed by a specified enterprise within a first specified period;

5   number-of-inventions acquisition means for acquiring number of inventions including the number of patent applications or utility model applications or the number of claims from the acquired unexamined publications or publications of registrations;

10   management-finance information acquisition means for acquiring R&D cost in the specified enterprise within a second specified period from a management-finance database storing management-finance information of enterprises;

patent application productivity calculation means for
15   calculating the number of inventions per unit of R&D cost as the patent application productivity through dividing the acquired number of inventions by the R&D cost; and

output means for outputting the calculated patent application productivity to display means, printing means,
20   recording medium, or another telecommunications device via a communication line.

Therefore, it will be possible to calculate the number of claims filed per R&D cost, measure the productivity of creating patents as a part of the results of research and
25   development, and estimate the efficiency of the research and development.

The larger the calculated value of the patent application productivity, it will be possible to judge that the productivity of the number of patent applications or number of inventions such as the number of claims in the research and
5   development is high, and that the enterprise's consciousness of patents is high. Further, it will be possible to judge whether the enterprise is making efficient research investment.

Further, with respect to patent applications filed by a specific enterprise within a first specified period, by
10   calculating the patent application productivity using the R&D cost of the previous year (during the second specified period) of such patent applications, it will be possible to calculate the patent application productivity of the number of inventions (number of claims filed or the like) of the
15   following year having a high coefficient of correlation with the variation in the R&D cost, and the productivity of the number of inventions of an enterprise can be judged more accurately.

[0273]

20   Further, the present invention comprises:

number-of-inventions-per-applicant acquisition means acquire the number of patent applications or utility model applications or the number of claims from each of the acquired unexamined publications or publications of registrations,
25   acquire the number of applicants indicated in each of the acquired publications, and acquire the number of inventions

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per unit of applicants through dividing the number of patent

applications or utility model applications or the number of

claims by the number of applicants; and

the number-of-inventions acquisition means acquire the

5   total number of inventions by counting the acquired number of

inventions per unit of applicants for all of the acquired

publications.

Therefore, the productivity of the number of inventions

of an enterprise can be judged more accurately even for

10   enterprises filing numerous joint applications.

According to the present invention, since the patent

application productivity is calculated in the predetermined

technical field of a specific enterprise, it will be possible

to judge the productivity of the number of inventions per

15   technical field or per manufacturing department even for

enterprises engaged in numerous fields of technical

development.

[0274]

Further, the present invention comprises:

20   official gazette acquisition means for acquiring, from a

database, unexamined publications or publications of

registrations based on patent applications or utility model

applications filed by a specified enterprise within a first

specified period;

25   number-of-inventions acquisition means for acquiring

number of inventions including the number of patent

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applications or utility model applications or the number of claims from the acquired unexamined publications or publications of registrations;

management-finance information acquisition means for acquiring R&D cost in the specified enterprise within a second specified period from a management-finance database storing management-finance information of enterprises;

patent application productivity calculation means for calculating the number of inventions per unit of R&D cost as the patent application productivity through dividing the acquired number of inventions by the R&D cost;

publication in which an examination request period has passed acquisition means for acquiring, from a database, unexamined publications or publications of registrations based on patent applications or utility model applications filed by the specified enterprise within a third specified period so that the examination request period pass before tabulation;

estimated examination request ratio acquisition means for acquiring the number of patent applications and the number of examination requests made in the applications from the unexamined publications or publications of registrations based on patent applications or utility model applications filed within the third specified period, and calculating the estimated examination request ratio through dividing the acquired number of examination requests by the acquired number of patent applications;

examination request productivity calculation means for

calculating the examination request productivity by

multiplying the calculated patent application productivity

with the estimated examination request ratio; and

5   output means for outputting the calculated examination

request productivity to display means, printing means,

recording medium, or another telecommunications device via a

communication line.

Therefore, it will be possible to correct the patent

10   application productivity based on the performance of previous

examination requests, and the productivity of patent

applications can be corrected into an easy-to-use format. By

perusing the examination request productivity, the user will

be able to predict the productivity or establishment of rights

15   of future patent applications, and it will be possible to

judge whether the enterprise has numerous effective

applications, numerous defensive applications, or numerous

wasteful applications.

[0275]

20   Moreover, the present invention comprises:

first official gazette acquisition means for acquiring,

from a database, unexamined publications or publications of

registrations based on patent applications filed by a

specified enterprise within a first specified period;

25   number-of-inventions acquisition means for acquiring

number of inventions including the number of patent

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applications or the number of claims from the acquired

unexamined publications or publications of registrations;

management-finance information acquisition means for

acquiring R&D cost in the specified enterprise within a second

5   specified period from a management-finance database storing

management-finance information of enterprises;

patent application productivity calculation means for

calculating the number of inventions per unit of R&D cost as

the patent application productivity through dividing the

10   acquired number of inventions by the R&D cost;

fourth official gazette acquisition means for acquiring,

from a database, publications of patent registrations

subjected to registration from among the patent applications

filed by the specified enterprise within a fourth specified

15   period;

average period required for registration calculation

means for calculating a required registration period for

individual applications by subtracting a filing date from a

registration date indicated in the acquired publications of

20   registrations, calculating an accumulated required

registration period by counting the calculated required

registration period for all patents subjected to the

registration, and calculating the average period required for

registration through dividing the accumulated required

25   registration period by the total number of patents subjected

to the registration;

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fifth official gazette acquisition means for acquiring, from a database, unexamined publications or publications of registrations based on patent applications filed by the specified enterprise within a fifth specified period, and the

5 publications of patent registrations subjected to registration by the arrival of a predetermined time from among the patent applications;

cumulative number of patent applications acquisition means for acquiring, for each predetermined period, the

10 cumulative number of patent applications filed by the specified enterprise within the specified period based on the acquired unexamined publications or publications of registrations;

cumulative number of patent registrations acquisition

15 means for acquiring, for each predetermined time, the cumulative number of patent registrations of patents subjected to registration by the arrival of each predetermined time based on the acquired publication of registrations;

cumulative patent registration ratio calculation means

20 for calculating, for each predetermined time, the cumulative patent registration ratio through dividing the acquired cumulative number of patent registrations by the cumulative number of patent applications;

estimated registration ratio calculation means for

25 calculating, for each predetermined time, the natural logarithm of the cumulative patent registration ratio and

calculating the regression line or regression curve thereof, and calculating a future estimated registration ratio by substituting the calculated average period required for registration for the calculated regression line or regression

5   curve;

patent acquisition productivity calculation means for calculating the patent acquisition productivity by multiplying the calculated patent application productivity with the estimated registration ratio; and

10   output means for outputting the calculated patent acquisition productivity to display means, printing means, recording medium, or another telecommunications device via a communication line.

Therefore, it will be possible to correct the patent

15   application productivity based on the estimated registration ratio which is an estimate of the patents to be ultimate acquired, and the proper R&D cost and productivity creating the patents can be provided to the user. Since the important issue for an enterprise is the number of patents that it is

20   able to ultimately acquire, by providing the patent acquisition productivity according to the present invention to the user, the user will be able to judge the strength or weakness of development capability per technical field.

[0276]

25   Further, the present invention comprises:

display data generation means for generating display data

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for associating and displaying the patent application

productivity and the examination request productivity in a

graph or the like; and

output means for outputting the display data to display

5   means, printing means, recording medium, or another

telecommunications device via a communication line.

Therefore, it will be possible to evaluate, per

enterprise or per technical field, whether the R&D cost are

being effectively injected and whether the inventions in the

10   filed patent applications are being requested for examination.

Moreover, it will be easy to search for enterprises that

are efficiently filing patent applications in relation to the

amount invested in the R&D cost and have a high examination

request ratio, thereby of a posture of not wasting the

15   inventions filed, and to search for enterprises that are not

sufficiently creating inventions in relation to the invested

amount and have a low examination request ratio, whereby the

amount invested in the research and development is not being

utilized effectively.

20   [0277]

Further, the present invention comprises:

display data generation means for generating display data

for associating and displaying the patent application

productivity and the patent acquisition productivity in a

25   graph or the like; and

output means for outputting the display data to display

means, printing means, recording medium, or another

telecommunications device via a communication line.

Therefore, it will be possible to easily research whether

the enterprise is effectively injecting R&D cost and

5   effectively acquiring patents.

Moreover, it will be possible to easily research an

enterprise showing high patent application productivity even

though the number of patent applications is small, or an

enterprise have efficiently expended R&D cost in patent

10   applications, or an enterprise superior in methods of research

and development.

[0278]

Further, by searching for enterprises in which patent

applications are becoming registered as patents in an

15   extremely high percentage, the patent registration ratio per

R&D cost can be estimated to be high, and it will be possible

to easily search for an enterprise that is highly likely to

enter into a monopolistic state regarding its future

technology.

20   [0279]

Moreover, the present invention comprises:

display data generation means for generating display data

for associating and displaying the examination request

productivity and the patent acquisition productivity in a

25   graph or the like; and

output means for outputting the display data to display

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means, printing means, recording medium, or another telecommunications device via a communication line.

Therefore, it will be possible to judge whether the inventions of a specified enterprise requested for examination as a result of the effective injection of R&D cost are being subject to the effective registration.

Further, it will be possible to easily judge whether an enterprise is making examination requests in a high rate for the inventions that it filed and whether such inventions are patented in a high rate, and whether the enterprise is patenting its inventions and taking care of such patents.

Moreover, when an enterprise has a low examination request productivity value and a low patent acquisition productivity value regarding its filed inventions, the number of examination requests will be low and the percentage of obtaining patents will also be low. Therefore, it will be possible to easily judge whether an enterprise has numerous patent applications going to waste with respect to the allowance of patents, or whether an enterprise may possibly have some strategic problems regarding patent applications.

[0280]

Further, by operating the indexes relating to patent productivity in a plurality of industries or technical fields and displaying the distribution of the respective enterprises, the user will be able to easily discover the characteristics of the respective industries and the existence of

characteristic enterprises in such industries. It will also be
possible to utilize this in judging the value or status of the
displayed enterprise.